CONTENTS

JUNE, 1933

Honey Markets	324-325
Editorials	329-331
Swarm-Prevention in Comb-Honey Production—W. A. Rowland	332-333
Bigger Colonies, Bigger Crops, Less Work—Jack Deyell	333-337
Queen Introduction—Allen Latham	337-339
Many Obstacles to be Overcome—Dr. E. F. Phillips	339-343
Control of American Foulbrood—Edwin J. Anderson	343-346
Dr. C. C. Miller and His Family—E. R. Root	346-348
Told by the Jay	349
Another Use for Carbolic Acid—Charles Mraz	350
Why Make Supering Difficult—Jack Deyell	350-351
A Handy Swarm Catcher—G. P. Beyleveld	351-352
Spinster Jane Says—	353
Comments on Current Items—J. F. Dunn	353
From North, East, West and South	354-360
Picture Page	361
Food Department—Malitta D. Fischer	362-363
Talks to Beginners—Geo. S. Demuth	364-365
Gleaned by Asking—Geo. S. Demuth	366-367
Clouds and Sunshine—A. N. Onymous	368
Bees, Men and Things	369

Subscription Rates—Present special rate of two years for $1.00. Single copy, 10 cents. Special Canadian subscription, one year for $1.00. Foreign subscription, $1.50 for two years. No yearly subscription. Discontinuance—Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. Change of Address—Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance—Should be sent by postoffice money order, bank draft, express money order or check. Contributions to Gleanings columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. Advertising Rates—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' Liability—While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.
Entered as second class mail matter at the Postoffice at Medina, O. Published monthly.

The A. I. Root Company, Publishers, Medina, Ohio

Geo. S. Demuth and E. R. Root, Editors; H. H. Root, Assistant Editor;
M. J. Deyell, Business Manager

If You Wait You Lose!

BEES and the HONEY FLOW DO NOT WAIT.

Don't Let Your Bees be Idle for Lack of Room

Order those needed supplies today, from your nearest Root dealer, or if there is no dealer located to serve you, send direct to the factory at Council Bluffs. Our large stock is your assurrance of prompt shipment. Eight trunk line railroads assure quick delivery.

Prices are right. Quality guaranteed.

98% of orders shipped in 24 hours.

The A. I. Root Co. of Iowa
COUNCIL BLUFFS, IOWA

To New York State Beekeepers

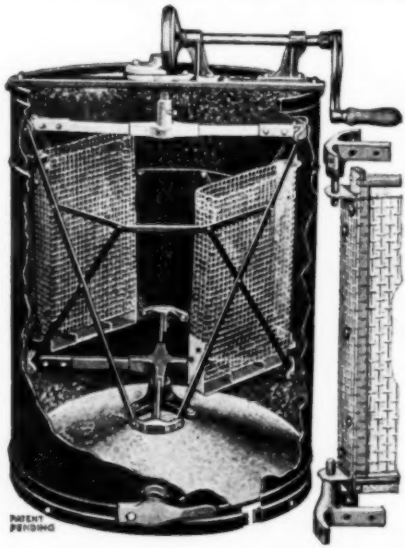
In 1932 we shipped from Syracuse over **A CARLOAD OF THREE-PLY AIRCO FOUNDATION.** Just sold 6000 sheets to a large orchardist who knows the value of good combs.

THREE-PLY MAKES A SMALL HIVE LARGE AND A LARGE HIVE LARGER. It enlarges the worker brood area.

A. I. Root Company of Syracuse
Midland Ave. and Tallman St.
SYRACUSE, N. Y.

Serves You Best

Removable Reversible Basket Extractors



Style.	Size of can.	Size of basket. width.	Price.
Style 15-2 basket	20x30	10"	$20.00
Style 15-4 basket	24x32	10"	27.50
Style 17-2 basket	24x32	12"	25.00
Style 20-2 basket	24x32	13"	25.00
Universal holding 4 deep or 8 shallow frames			29.50

Woodman's Reversible Basket Extractors are built so that the baskets can be lifted up and out for cleaning or disinfecting or to insert a capping basket to whirl cappings dry. Reel and baskets all of heavy material, well braced riveted construction, no solder is used. A 50-frame Radial and other smaller size extractors are offered. Send for special circulars.

GET OUR SPECIAL PRICES ON TIN CANS AND PAILS

Cartons, Wrappers, Cases, etc., stating the quantity you can use.

A. G. Woodman Co., Grand Rapids, Michigan, U. S. A.

SECTIONS SECTIONS SECTIONS SECTIONS

GOOD BETTER BEST

Never let it rest 'till the good is better and the better best.

This very old proverb is more truth than poetry when it is connected with LOTZ SECTIONS. They have been PERFECTED by keeping this adage in mind.

1. Perfect fitting dove-tail.
2. Correctly cut V-grooves that fold SQUARE WITHOUT BREAKING.
3. Smooth, glossy finish.

What more can anyone ask for in a SECTION? Place your orders now. Prompt service guaranteed.

August Lotz Co.
Boyd, Wis.

SECTIONS SECTIONS SECTIONS SECTIONS

SECTIONS SECTIONS SECTIONS SECTIONS

Honey Markets

Information from Producing Areas (first half of May.)

California Point: Southern California—The weather has been cool during this period, with considerable cloudiness and moderate rainfall. The orange flow is more than half over. Cool weather and rains have interfered with the flow, which is nearly a month later than normal, but the trees have bloomed heavily, and when weather has permitted bees have brought in considerable nectar. Many colonies have been placed in the orange districts this year, and although some beekeepers in this territory may not obtain enough honey to extract, it is generally believed that an orange crop 75 per cent of normal may be secured, and probably more than last year's light crop. The rainfall has materially improved buckwheat prospects, and in the higher altitudes a sage-buckwheat surplus may be nearly normal though late. Colonies are heavy with brood, and much feeding is being done. Trading has been rather limited, with beekeepers generally holding for higher prices, especially those having white or extra white sage honey, in view of the prospective light sage yield. Sales reported by beekeepers, in ton lots or more, per lb., follow: Orange, new crop, few sales extra white to water white, 5¾-6c; white, 5-5¼c, occasional lot old crop, 6c; sage, white to extra white, 5-5½c; extra light amber, 4c; buckwheat, light amber, large lot, 4⅞c; buckwheat-sage, light amber to extra light amber, 3½-3¾c, occasional lot lower. White sage comb has sold at $3.75 per case. The beeswax market has had a firmer tendency and somewhat better inquiry is being received from eastern markets. Sales delivered Los Angeles reported mostly 11-12c in trade, 9-10c per lb. in cash.

Intermountain Region—Demand for honey is said to be spotted, but in some areas it is improving and considerable buying activity is reported. Stocks are lessening rapidly and many beekeepers are finding it necessary to buy from others to supply their trade. Sales reported, per lb., carlots: Sweet clover and alfalfa, extra white to water white, 4-4¼c; extra white, 4c; some, 3½c; white, 3¼-3½c; extra light amber, 3c; some extra light amber to white, 3-3¼c; light amber, 2¾c; less than carlot sales: white to water white, large lots, 3-4c; 60s, 4-5c; in trade high as 6c; small pails, 5-6½c. No. 1 comb, $2.00 per case. Beeswax has sold from 10c for average to 12c per pound for light.

Northeastern States: New York—Following recent heavy rains prospects for a clover flow now appear better than anticipated. Although some cellar-wintered bees are below average, colonies generally came through the winter in better shape than usual, and in many yards are in the best condition this season that they have been in many years. Bees have been working on skunk cabbage, cowslips, and maples, and dandelions are almost ready to bloom. Stocks of honey are light and many beekeepers are completely sold out. Sales reported, clover 60s, 6½-7c; small pails, 8c; buckwheat, 60s, 6c; small pails, 7c; amber, large lot, 4c per lb. No. 1 white comb reported sold at $2.00 per case; few lots slightly higher.

East Central and North Central States: Minnesota and Wisconsin—The soil is well filled with moisture and prospects are for a better nectar flow on the whole than that of last year, though the spring is still slow and cold. Bees are generally in good shape though with great variation reported in wintering results. Occasional beekeepers have had heavy losses both in cellars and outside, especially where left outside without packing and with inadequate stores. Some cellar-wintered bees, however, especially in Wisconsin where loss was heavier than in Minnesota, lost heavily also because of honeydew in the stores or of poor cellar conditions. Bees have been unable to fly much lately because of cool, cloudy weather, and are building up slowly. Numerous package bees and nuclei have been shipped into this territory. Supplies of honey are now very light. Demand for extracted is said to be fair; calls for comb are spotted, but good cellophane-wrapped is reported in demand. Sales reported, white extracted, large lots, 4-6c, including 1 car at 4¼c; 60s, 4-7c; small pails, 6-9c; light amber large lots, 4-5½c; 60s, 6c; small pails, 6½-8c. Sales reported of white comb, No. 1, $2.00-3.25 per case; fancy up to $3.60 per case. Beeswax, 12½c per lb. for country run, 15c in trade. Michigan—Bees came through the winter in fairly good shape, with losses chiefly of late swarms. The season is very late, and some colonies are still packed. Brood-rearing is being retarded by the cold, rainy weather, and many colonies will need to be fed if they are not to starve. Honey plants heaved rather badly and prospects are uncertain. Due to the unfavorable weather conditions bees have not been able to work much on pussy-willow and maples. Few sales reported, white clover, large lots, 4-4¼c; small pails, 6c per lb.; ton lots light to amber, 4c per lb. Yellow beeswax is being sold at 15c per lb.

Southeastern States: Georgia—Conditions have improved greatly and a heavy flow is now general, though the present dry weather is curtailing the gallberry flow. Swarming is among the worst on record on account of cool nights, and many colonies are not in proper shape to gather a surplus. Moving, packing and shipping of new crop honey is now under way and prospects are encouraging for a big flow. Few sales of new crop. Tupelo in small containers reported at 7½c per lb.; dark amber, old crop, granulated in barrels, 2c per lb. Northern Florida—The tupelo bloom is heavy, but is not secreting nectar satisfactorily and bees are only working on it part time, mostly late in the evening. Cold nights and many rains have interfered with the flow also. Sales reported of fancy tupelo in 60s at 7½c per lb.; small pails, 10c per lb.; amber mixed flowers in barrels, 4c per lb. Southern Florida—Bees are busy on late palmetto and gallberry bloom and are securing some surplus, though less than beekeepers think they should, considering the heavy bloom. Gallberry honey is especially light in color. Sales reported

BRIGHT GOLDEN ITALIANS

We are offering those large, uniform, prolific, quality queens, properly raised and carefully caged.

They produce large, gentle, yellow bees that are such excellent honey makers and are so pleasing to handle. Every owner admires and praises them.

1 queen, 75c; 2 to 9, 50c; 10 and over, 45c.

STEVENSON'S APIARIES, Westwego, La.

QUEENS

BETTER QUEENS

High-grade dependable three-banded Italian queens. None better.

35c; 3 for $1.00; 12, $3.95.

Send me your order. I rear queens to please and gain your patronage. Try them.

G. H. MERRILL APIARIES, Greenville, S. C.

Package Bees & Queens

Three-pound packages with queens, 1 to 24, $2.50; 25 to 49, $2.25; two-pound packages, 1 to 24, $2.00; 25 to 49, $1.75. Golden and 3-banded queens, 1 to 24, 60c. Large overweight packages and satisfaction guaranteed.

VALLEY BEE & HONEY CO., Weslaco, Texas.

of small pails extracted at 6-7c per lb.; bulk comb, 10c per lb.

Summary.—Cool, rainy weather has been general over most of the country and some snow has fallen in the Mountain States. This weather has kept bees in the hives and has retarded brood-rearing, but has greatly improved prospects for a nectar flow from white clover, sweet clover and alfalfa. Spring losses have been serious, especially among the non-commercial beekeepers, and many colonies have starved. An unusualy large number of colonies have required feeding. Package and queen shipments have been heavy, but unfavorable weather has handicapped development of package bees in the North. The season is everywhere late, often from two to three weeks. Late rains may result in a sage flow in the California mountains, but near the coast little sage honey is expected, and not much buckwheat.

Though prices have not increased much, the honey market seems slightly stronger as stock rapidly lessens in all parts of the country. Numerous beekeepers are buying from others to take care of current orders. Though occasional commercial beekeepers still have heavy stocks on hand, in most sections little remains unsold and beekeepers are not concerned about the possibility of a carry-over into next season. Comb honey is especially scarce, with demand spotted. Beekeepers are generally optimistic over the future trend of the honey market.

Monthly Report of Honey Producers

Early in May we sent the following questions to honey producers: 1. At what price has honey been sold or contracted for, if any, in large lots (carloads or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 2. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 3. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 4. How is honey now moving on the market in your locality? Give answer in one word as slow, fair or rapid. 5. How does the number of colonies that are in condition to store surplus honey this season compare with the number of such colonies last year? Give answer in per cent. 6. What is the condition of the honey plants at this time in your locality as compared with the average? Give answer in per cent. 7. What is the per cent of winter and spring loss of colonies (if any) in your locality? Give answer in per cent. 8. What is the present condition of the colonies in your locality as compared with normal. Give answer in per cent. The answers received are tabulated as follows:

State.	Name.	Large lots. Ex.	Large lots. Comb.	To grocers. Ex.	To grocers. Comb.	Retail. Ex.	Retail. Comb.	Movement.	No. of colo.	Cond. honey plants.	Pct. Cond. wint. loss.	Pct. Cond. of col.
Ala.	(J. M. Cutts)	..	..	$.45	..	$.55	..	Fair	90	75	9	100
B. C.	(A. W. Finlay)	.09½	..	.60	..	.75	..	Slow	100	Good.	10	100
Calif.	(L. L. Andrews)	..	..	..	..	.57	.17	Fair	125	30	6½	100
Colo.	(O. E. Adcock)	.04¼	..	.32½	..	.40	..	Fair	50	80	15	75
Colo.	(J. A. Green)	..	..	.30	1.60	.45	.10	Fair	90	100	25	90
Conn.	(A. Latham)	..	..	..	4.50	.80	.27	Slow	100	125	10	70
Fla.	(C. C. Cook)	..	..	.34	..	.47	..	Slow	150	150	10	125
Fla.	(Harry Hewitt)	..	..	.45	..	.55	..	Slow	90	125	15	100
Ga.	(J. J. Wilder)	.05	..	.40	..	.50	..	Fair	70	100	30	100
Ill.	(A. L. Kildow)	..	..	..	..	.50	..	Slow	100	125	10	110
Ind.	(T. C. Johnson)	..	..	.40	2.60	.50	.12	Slow	95	100	10	95
Ind.	(E. S. Miller)	..	..	.45	2.00	.60	.10	Slow	90	100	10	90
Ind.	(Jay Smith)	..	..	.40	2.40	.50	.12	Slow	75	125	25	100
Iowa.	(E. G. Brown)	..	..	..	..	.45	..	Fair	100	110	4	110
Iowa.	(F. Coverdale)	..	..	.40	..	.50	.13	Slow	90	100	2	100
Kans.	(J. F. Garner)	.05¼	..	.40	2.75	.50	..	Fair	100	100	..	100
Me.	(O. B. Griffin)	..	..	..	5.00	..	.30	Slow	50	75	50	50
Md.	(S. G. Crocker)	..	..	.60	2.80	.75	.20	Slow	100	90	5	100
Mich.	(I. D. Bartlett)	..	..	..	..	.45	..	Slow	85	100	15	100
Mich.	(L. S. Griggs)	.04¾	..	..	..	.40	.10	Slow	90	125	20	75
Mich.	(F. Markham)	.05	..	.37	2.00	.50	.10	Fair	100	100	2	125
Mich.	(E. D. Townsenl)	.04¾	..	..	..	..	..	Fair	100	100	..	90
Minn.	(F. W. Ray)	.04½	2.00	.35	2.25	.45	.13	Slow	90	75	12	80
Nebr.	(J. H. Wagner)	..	..	..	..	.40	.10	Slow	90	90	5	90
Nev.	(G. G. Schweis)	..	..	..	..	.40	.15	Slow	80	50	..	100
N. Y.	(Adams & Myers)	..	..	..	..	..	..	Slow	100	100	10	125
N. Y.	(Geo. B. Howe)	..	..	.50	..	..	..	Fair	100	90	10	100
N. Y.	(F. W. Lesser)	.06½	..	.40	2.40	.50	.15	Slow	100	75	10	80
N. C.	(C. S. Baumgarner)	..	..	.65	..	.75	.20	Slow	110	110	..	110
N. D.	(Chas. Engle)	.04½	..	.35	..	.40	.12	Slow	100	90	15	85
Ohio.	(J. F. Moore)	.05	..	.45	..	.65	.15	Slow	90	90	10	100
Okla.	(C. F. Stiles)	..	..	.60	..	.70	.17	Fair	95	100	10	90
Ore.	(H. A. Scullen)	..	..	.35	..	.44	..	Rapid	75	50	25	75
Pa.	(D. C. Gilham)	..	..	.65	4.00	.85	.25	Slow	100	100	8	100
Pa.	(H. B. Kirk)	..	..	.67½	3.25	.95	.22	Slow	150	95	3	100
S. C.	(E. S. Prevost)	..	..	..	..	.50	..	Fair	90	100	5	100
Tenn.	(J. M. Buchanan)	..	..	..	..	..	..	Slow	90	90	5	100
Tenn.	(W. L. Walling)	..	..	..	..	.85	..	Slow	100	90	5	100
Texas	(J. N. Mayes)	..	..	..	..	..	..	..	50	40	20	50
Texas	(T. A. Bowden)	..	..	.35	..	.45	..	Slow	35	60	2	65
Texas.	(H. B. Parks)	..	..	.27	..	.35	..	Fair	90	25	4	80
Utah.	(M. A. Gill)	..	..	.25	2.40	.30	.12	Fair	75	80	15	75
Vt.	(Phillip Crane)	..	..	..	..	..	..	Slow	105	90	10	90
Wash.	(W. L. Cox)	..	..	..	..	..	..	Fair	75	95	25	80
W. Va.	(W. C. Griffith)	..	..	.25	1.95	.35	.10	Slow	100	100	..	90
Wis.	(N. E. France)	..	..	.45	2.00	.59	.11	Fair	90	100	6½	90
Wis.	(E. H. Hanselman)	..	..	.35	2.00	..	.11	Slow	50	Fair	50	50

Root Service from

CHICAGO

Beekeepers will keep

FAITH

in beekeeping. It has had a CENTURY OF great PROGRESS. There is great promise that in the next century the demand for honey will increase many fold.

Keep your asset in bees good as conditions gradually improve. Will you plan for improvement of stock, new equipment or seek better knowledge of beekeeping? We can help you.

Let us quote on the list of things you need.

Ask for Root's bee-supply catalog.

Ask for our new prices on glass and tin containers.

A. I. Root Co. of Chicago
224 West Huron Street
CHICAGO, ILL.

Hilbert Method Cut Comb Honey

Write for our new catalog which will include free full information on Cut Comb Honey.
James E. Hilbert, Traverse City, Mich.

Why Haven't We Had This

Kind of Hive Before?

That's the common comment when beekeepers see the **NEW FROST KING** hive. Modern insulated construction, but takes standard fittings. Illustrated circular and prices yours on request. A post card brings them, or mail the coupon.

The Louden Machinery Company,
201 North B Street, Fairfield, Iowa.
Send details on the FROST KING hive—no obligation to me. I own....colonies of bees.
Name .....
Address .....

RED STICK
PACKAGES & NUCLEI

JUNE:
2-pound package with queen. $1.25
3-pound package with queen..... 1.75
These prices net, American exchange.
Queens, 35c; three for $1.00.

Low prices, large apiaries, responsibility.
RED STICK APIARIES
P. O., Montegut, La. Tel., Houma, La.

PATENTS Pat. Counsel of The A. I. Root Co. Practice in Pat. Off. & Court.
CHAS. J. WILLIAMSON
Munsey Bldg., 1329 E St. Washington, D. C.

3% Banking by MAIL

We have earned—and KEPT—the confidence of depositors in all sections of the United States. Send for details of our service.

E.B. SPITZER PRESIDENT
E.R. ROOT VICE-PRES.
H.E. AYLARD CASHIER

THE SAVINGS DEPOSIT BANK CO. MEDINA OHIO

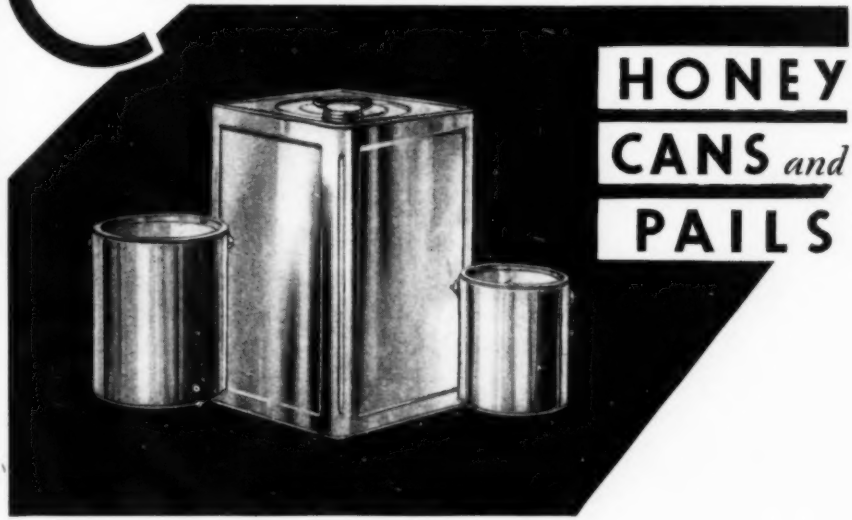
—DEALERS— ATTENTION

We have a special proposition of interest to all dealers or to all beekeepers who wish to become dealers of Beekeepers' Supplies. Write for information. All goods are GUARANTEED SATISFACTORY

Falcon Quality Products

W. T. Falconer Mfg. Company
Falconer, New York

CONTINENTAL



HONEY CANS *and* PAILS

CONTINENTAL'S modern Honey Cans and Pails are the most economical of all honey packages. No other type of container yields so much in service at so little cost.

These bright, clean, tight cans will preserve all the goodness of your honey, excluding air, moisture, light and other destructive elements that tend to impair contents.

They are made in several styles and sizes to meet your needs. A distributor is convenient to you (see panels below) and will gladly send you samples, prices and all particulars on Continental Honey Cans and Pails.

CONTINENTAL CAN COMPANY, INC.

4622 West North Avenue, Chicago, Ill.

WHEELING JERSEY CITY LOS ANGELES
ST. LOUIS CINCINNATI

DISTRIBUTORS

Decatur, Ind.
The Brock Store

Grand Rapids, Mich.
A. G. Woodman Co.

Boise, Idaho
Mountain States Honey Prod. Assn.

Los Angeles, Cal.
LosAngelesHoneyCo.
Hamilton, Wallace & Bryant
Diamond Match Co.

Ripon, Wis.
TheSchultzHoneyCo.

Manhattan, Mont.
Superior Honey Co.

Hamilton, Ill.
Dadant & Sons

Moorhead, Minn.
North Dakota Bee Supply Co.

Ogden, Utah
Superior Honey Co.

Denver, Col.
Colorado Honey Producers Assn.

Lansing, Mich.
M. H. Hunt & Son

St. Paul, Minn.
A. I. Root Company

Syracuse, N. Y.
A. I. Root Company

Winona, Minn.
Standard Lumber Co.

Fargo, N. Dak.
Magill & Co.

Sioux City, Ia.
Sioux Honey Assn.
G. B. Lewis Co.

Watertown, Wis.
G. B. Lewis Co.

Albany, N. Y.
G. B. Lewis Co.

Lynchburg, Va.
G. B. Lewis Co.

Council Bluffs, Ia.
The A. I. Root Company of Iowa

Chico, Cal.
Diamond Match Co.

Phoenix, Ariz.
Quick Seed & Feed Co.

Chicago, Ill.
A. I. Root Company

Columbia, S. C.
B.B.KirklandSeedCo.

Long Beach, Cal.
J. E. Delgado & Co.

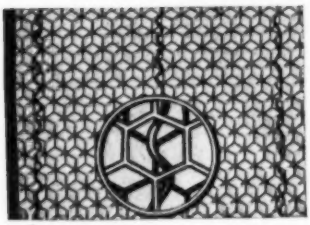
Wheeling, W. Va.
G. B. Lewis Co.

San Francisco, Cal.
E. F. Lane & Son

Brawley, Cal.
R. W. Tabor

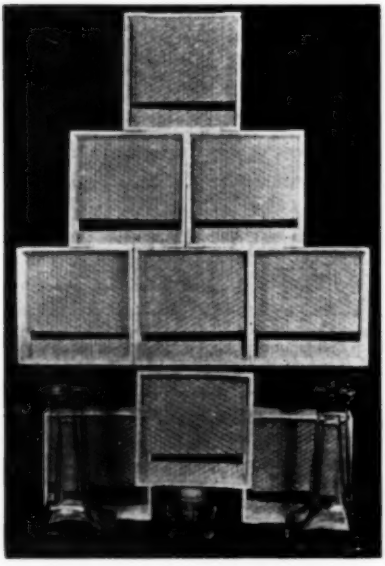
Dadant's Foundations

Crimp-Wired Foundation



Each sheet made of pure beeswax just as your bees make it without any addition of other waxes whatsoever. Each sheet reinforced with nine crimped steel wires with hooks at the top to hold securely in the frame.

Strength enough to make combs that last honeyflow after honeyflow as long as combs are used. Each sheet inspected and tissue packed by hand.



Surplus Foundation

A DELICATE CENTER FOR THE BEST COMB HONEY.

So light and clear you can read through it. Made of highest grade, light colored beeswax. It becomes a part of the honey—dainty, clear, delightfully chewey. Nothing goes into it but absolutely pure beeswax so it is safe for food use.

Plain Foundation

Dadant's Plain Foundation is a high grade product to give you every satisfaction. Of pure beeswax—clean, yellow and beautiful. With a sweet hive-like odor that at once makes friends with beekeepers.

Dadant & Sons, Hamilton, Illinois

MAKERS OF FAMOUS FOUNDATIONS—CRIMP-WIRED—PLAIN—SURPLUS

Gleanings in Bee Culture
JUNE, 1933

Government Loans to Beekeepers

Some of the larger western honey producers who asked for loans from the Agricultural Credit Division of the Reconstruction Finance Corporation to finance this year's honey crop were told that government loans could not be made to beekeepers since beekeepers are not farmers. This condition came to light back in April at which time the American Honey Producers' League, bee-supply manufacturers and others brought whatever influence they could to bear upon those in charge of loans to farmers in order to obtain, if possible, a reconsideration of the ruling. The Agricultural Credit Division has agreed to reconsider the matter.

Conditions Favorable for Clover Honey

Not since 1929 have conditions been so favorable for the clovers. The cool, wet weather during April and May, which has caused so much anxiety among the farmers in planting their spring crops, was just right for the clovers. The best yields from white clover and alsike clover have usually followed cool, wet weather in April and May. If the weather becomes favorable this month, white clover and alsike clover should yield abundantly. In many cases, the ground has been so wet that the farmers have decided to let fields of clover stand which they had intended to plow under for some other crop. Many of these fields will no doubt be used for pasture. The bees will certainly make good use of this additional acreage if weather conditions are favorable at the time of bloom.

Weather Conditions Induce Early Swarming

In many localities, especially in the East, early swarming has been unusually bad this season. Bees have been confined to their hives by rain and chilly weather during much of the building-up period. Colonies that were well supplied with honey and pollen forged ahead in their spring brood-rearing regardless of adverse weather. With an abundance of honey and pollen within the hive and with water available on the alighting-board or on the grass in front of the hive, the bees had everything needed for extensive brood-rearing. In addition, the field workers were not worn out by work in the field. Therefore, they lived longer, thus helping to bring about a rapid increase in numbers. On top of all this, the great army of field workers, compelled to stay within the hive by bad weather, brought about severe congestion within the brood-chamber, the one factor always present in all normal swarming.

Those who have been searching far afield for the cause of swarming and have failed to recognize the real cause apparently because it is so simple and plainly revealed, should note the conditions which brought about excessive early swarming in many eastern localities this spring. If the weather and nectar conditions had been such that the field bees could have spent most of their time in the fields during the day, there would have been no trouble from early swarming.

Reserve Stores Result in Enormous Colonies

There is a marked contrast in the condition of colonies at this time, especially in the clover belt. Those which were supplied with an upper story well filled with honey last fall, have built up to enormous strength, while many in single-story hives are far behind in building up for the honey flow. In many cases, colonies in single stories consumed most of their reserve of honey early in the spring, and were thus compelled to restrict brood-rearing to avoid actual starvation. Unfavorable weather conditions made it difficult to retrieve the situation by feeding so that many single-story colonies will not be able to build up to great strength in time to take full advantage of the honey flow from white clover and alsike clo-

ver, although they may be ready for sweet clover a little later.

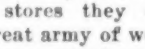
On the other hand, the two-story colonies that were abundantly supplied with honey, forged ahead with astonishing rapidity in brood-rearing late in April and early in May, so that they were able to send large forces to the field between showers during fruit bloom and dandelion bloom. Thus they returned with good interest the stores they consumed in rearing this great army of workers. While the big two-story colonies were actually increasing their stores by working between showers, many single-story colonies were actually losing in weight, not having a sufficient force to take advantage of the early nectar. The parable of the talents certainly applies among the honeybees in respect to their stores for those which have are given more abundantly, while, from those which have not, is taken away even that which they have.

Government Work in Beekeeping

Beekeepers are much concerned about what may happen to the excellent work in beekeeping now being done by the Bee Culture Laboratory at Washington, as a result of the re-organization of government activities. There is danger that the work of the Bee Culture Laboratory may be considered of minor importance and thus be badly crippled if not almost eliminated. There are plenty of rumors afloat as to what may happen to the Bureau of Entomology of which the Bee Culture Laboratory is a part, but, judging from press reports, no one seems to know just what is going to happen.

If the work of the Bee Culture Laboratory should be badly crippled in the re-organization process, it will be largely because of a lack of information regarding the economic value of the beekeeping industry, not only in the production of honey and beeswax, but also the much greater economic value of honeybees in pollination. It has been estimated that the value of honeybees as pollinators is ten to twenty times as great annually as the value of all the honey and wax produced.

Since it is impossible at this time to obtain any information as to what steps may be taken in regard to the government work in bee culture, it is not clear just what can be done to save the situation. However, it will be well for beekeepers to inform their congressmen as to the value of the work the government is doing for the beekeeping industry, and especially the great importance of honeybees in the pollination of various agricultural crops. Whatever readjustment may be made it is certainly not unreasonable for beekeepers to ask that the work in beekeeping be included in the things to be continued, and that the important and more essential parts be retained.



Hiving Swarms

Many who keep a few colonies of bees by otherwise up-to-date methods, still cling to old-fashioned management in swarming. Proud possessors of a few colonies of bees expect to be called home from store, office, or field any day during the swarming season to take care of swarms that may issue. In many cases, this involves climbing to the top of a tree with a basket with the risk of being severely stung or being injured by falling from the tree. Often the risks taken to save a swarm of bees are entirely out of proportion to the value of the swarm.

It is difficult to understand why any one should cling to the old-fashioned method of hiving swarms in this day of enlightenment, and with our present information in regard to swarm control. By better management, the percentage of colonies that attempt to swarm during the season can be greatly reduced, even in localities where swarming is usually quite troublesome. In addition to this, it should never be necessary to watch for swarms to issue and take them down from inaccessible places. It is far less trouble to find and clip the wings of the queen in each colony prior to the swarming season than to go to the trouble of taking down swarms from trees. Those who expect to be away from home when swarms issue, in which case clipped queens may be lost, may prefer to put a queen-and-drone trap over the entrance for a few days when a colony is found preparing to swarm.

It is usually better still to treat the colonies preparing to swarm so that no swarms will issue, as is done by commercial honey producers, either by making an artificial swarm or by removing the queen, destroying all queen cells, then nine or ten days later again destroying all queen cells and introducing a young, laying queen. For a short, rapid honey flow, artificial swarming usually gives good results, but for a long honey flow, the de-

queening and requeening method is usually preferable. Those who keep a few colonies of bees in towns or cities usually have less worry about their neighbor's objecting to their keeping bees if they will so manage that no swarms issue. Often neighbors do not know that bees are being kept in the neighborhood until a swarm issues. Nearly every argument is in favor of amateur beekeepers adopting modern swarm-control methods and doing away entirely with the hiving of swarms.

The American Honey Institute and the Honey Market

I have just come from a visit to the office of the American Honey Institute at Madison, Wisconsin, with Mrs. Malitta Fischer Jensen, Secretary and Treasurer, and Miss Lavonne Taylor, assistant, in charge. I was prepared to believe that these two women were doing wonderful work and a lot of it, but when I saw the stacks of mail coming in from every state asking for information about honey and how to use it, when I saw nearly a thousand newspaper clippings about honey that they had inspired during honey week, last November, when I saw the magazine articles telling of the virtues of honey that Mrs. Jensen wrote or furnished material for, when I saw how the leading food companies, particularly the bakers, were ready to assist in the publicity of honey, well, I was amazed. I felt like the fellow who looked at the giraffe for the first time, then turned away and said, "There ain't no such animal." And yet there was right before me the unmistakable evidence of the work of these two girls—the greatest publicity that honey has ever received for so little cost.

On this point, the Vice President of the Institute, Mr. D. D. Stover, Tibbee Station, Mississippi, in writing to a beekeeper said, "I can prove to you that we are getting a world of publicity for mighty little money. You know that a page of space in some of our publications would cost twice as much as it would cost to run the Institute a whole year." Then he added, "Do you believe that it would be possible to run a half-page ad in any publication one time that would put nearly 1000 articles mentioning honey in newspapers in a single month?" Mr. Stover is a large advertiser and knows what it costs to buy space.

Confirming this statement I may add that I wish that every beneficiary, and that means beekeepers, supply manufacturers, and all sellers of honey, could spend one day in the office of the American Honey Institute as I did and see what has been and is being accomplished by Mrs. Jensen and Miss Taylor, the only people drawing pay from the Institute. These girls, working on reduced salaries, are plunging into work harder than ever. They know no regular hours. "The work has to be done," is their slogan. When they are working like that, we beekeepers should back them up with our dollars. The enormous amount of postage required to answer all inquiries about honey is pulling hard on the limited resources of the Institute.

The allied industries have felt that they have been carrying the financial burden of the Institute for the last five years almost alone; that the time has now arrived when beekeepers should lend their help more generously than before. If every honey producer who reads these pages will send in a little to the American Honey Institute, 417 North Few Street, Madison, Wisconsin, it will save the day. With depressed prices on honey it would be a crime against the beekeeping industry to let the Institute die for want of financial support when it has been doing such good work, and it must not die. Send in one dollar, better two dollars, better still, five or ten.

"There are 250,000 colonies of bees in Ohio alone," says Mr. Charles A. Reese, State Bee Inspector of Ohio. He adds that if every owner of bees in Ohio would give one cent for every colony he owns, it would make $2500.00. Certainly everyone who reads these lines can afford to do no less. He should do more as most beekeepers will not see this. Then if other states would do their like proportion, the Institute could put on six more people, every one of whom would have all he could do.

The price of honey is now almost the lowest it has ever been in history. It is time for all of us to back the Institute and save the honey market. If it had not been for the Institute there is no telling where the price of honey would have gone.

I accepted the office of President of the American Honey Institute more as a duty than as an honor, and the Institute shall not die if I can help it.—E. R. Root.

Swarm-Prevention in Comb-Honey Production

W. A. Rowland

Another Method of Forced Supersedure Just Prior to the Main Honey Flow

I often think of the following statement in reference to swarming made by Dr. Miller in his book, "Fifty Years Among the Bees": "Upon no other subject connected with beekeeping have I studied so much, tried so many plans, or made so many failures." We are all still seeking the perfect plan.

The great need today is some system of swarm prevention particularly suitable for the large producer, a system that is reasonably infallible, non-laborious, and that can be used in a wholesale way, enabling a man to run as many colonies for comb honey as for extracted with about the same amount of work. It is one of the greatest problems facing the producer, yet, strange as it may seem, a search through the reports of the different government experiment stations records for some years fails to reveal indications of any extensive experimental work connected with this troublesome feature. One would expect that they would concentrate on this, but it appears that we are each year receiving more valuable and useful information through our journals than from our experiment stations.

Influence of Environment

The duration and nature of the honey flow has some bearing on the question. A plan that works well in a long, slow honey flow (such as the Rauchfuss method which is applicable only to colonies strong enough to occupy two brood-chambers before the honey flow) would hardly be suitable in an early, short, rapid season lasting three or four weeks. Again, a plan that may work well applied near the end of the honey flow may not work at all at the beginning or middle. To illustrate this, in some instances I was successful in dissuading swarming one year by cutting queen cells, caging the queen for a week, again cutting queen cells and giving the bees back the same queen. The method of restoring the queen was to make an artificial swarm by shaking the bees in front of the hive and letting the queen run in with them. Last season this was tried on four colonies, resulting in absolute failure; in every instance the returned queen remained only long enough to lay a few days until new cells were started, then decamped, apparently being lost since clipped. These experiments were tried during the middle of the honey flow while the successful cases referred to happened when the flow was finished off. This is the only reason I can see for success in one case and failure in the other.

No Plan Invariably Successful

Sometimes treatment working satisfactorily with one colony may be a failure with the next. Whether the cause lay in the season, the nature of the honey flow, or some unknown factor, results last year were unusually uncertain. Generally speaking, making the colony queenless for from 10 days to two weeks, removing cells in the meantime, and supplying a laying queen by the cage method is fairly dependable. While in the majority of colonies this works perfectly, in others queens sometimes disappear a week later. It all makes one feel that bees are creatures of uncertain habits under some circumstances.

Supersedure Promises Best Results

In all our experiments and colony records, one fact stands out clearly: the colonies that produced the biggest yields were nearly always those whose queens had been superseded by young laying queens at the commencement of the honey flow or shortly thereafter, this condition being the most favorable for the production of a large surplus. These young queens were not introduced, but raised in the colony. A simple method of accomplishing this that we used last season on a number of colonies with excellent results is as follows:

At the beginning of the honey flow on the appearance of queen cells, remove the queen and destroy all queen cells except the finest appearing one which is left to requeen the colony. This, of course, is practiced only on colonies whose bees show every desirable trait. It has the disadvantages that the colony is queenless about 10 days, though this condition

is common to almost any method devised and may even assist in bringing about the desired result; and it may happen, though rarely, that the young queen is lost in mating and may have to be replaced. Some of our finest queens have been produced this way. Of course, if the colony being treated is not of a desirable strain, it is necessary and quite easy to supply it with several artificial cell cups containing larvae grafted from the finest strain. From these one cell can be selected and left a week later. It is claimed by some that an essential part of the treatment is to have the young queen raised in the colony itself.

Looking back several seasons I find that every colony producing comb honey made swarming preparations within a week or 10 days after supering, due to crowding the brood-chamber with brood and bees. The only exception to this was a colony of Caucasians which went through the season working wonderfully well without even starting any queen cells. Then why not purposely bring on the swarming impulse a week or 10 days before the honey flow commences by packing the brood chamber instead of having this condition develop of itself during the honey flow, then requeen by the method outlined above? The supersedure would then be accomplished at the right time and with minimum labor and expense of extra equipment. We have never seen reports of any experiments along this line and, among other things, plan to give it a trial this season.

Weston, Ontario.

[One objection to permitting a virgin queen to emerge in a colony after the swarming impulse has developed is that, in some cases, the colony casts a swarm accompanied by this virgin queen, thus leaving the colony hopelessly queenless. This can be avoided by rearing the young queen in one brood chamber while the old queen is laying in the other *before there is any notion of swarming*. The two brood-chambers may be separated by means of excluders and an extracting super placed between them, or they may be more completely separated by means of a moving screen provided with an entrance for the upper chamber. The chamber containing the old queen can be taken away when the comb-honey supers are given.—Editor.]

Bigger Colonies, Bigger Crops, Less Work

Jack Deyell
Manager of The A. I. Root Company's Apiaries

Eliminating Weak and Poverty-Stricken Colonies by Means of Food-Chambers

I hesitate to write more on this subject, on account of the possibility of being considered a crank on the food-chamber idea, but there are a few more things I want to say on the subject, then I may keep quiet for a while.

To me it is encouraging to see how the younger generation of beekeepers is catching on to the tricks of the trade, especially the proper use of the brood-chamber. I frequently meet young, enthusiastic beekeepers, who, with a gleam in their eye, tell about using the food-chamber and the wonderful results they have secured. Some of them seem to think that they have stumbled on a secret in beekeeping, and they seem inclined to keep the secret to themselves. We can't blame them much. However, there are many more-experienced beekeepers who apparently do not yet understand what the food-chamber is and how to use it.

Plenty of Good Food Essential

Good and ample food is essential to the prosperity of honeybees. A colony of wild bees in its natural environment, as, for example, in the hollow of a tree, gathers an abundant supply of honey and pollen during the active season to be used for fall, winter, and spring until nectar is again available the following year. The space in the hollow tree is often large enough for brood-rearing and for storing of an abundant supply of honey. Man has commercialized the activities of the honeybees and in so doing, has changed their habitat from hollow trees to movable-frame, sectional hives, in order to facilitate their handling.

There is always the temptation at the close of the main honey flow, to rob the bees of their rightful property, namely, the amount of honey necessary for their prosperity until abundant nectar is again available the following year. The beekeeper who yields to this temptation and fails to supply the consequent food deficiency later, either in sugar syrup or combs of sealed honey, either loses his bees from starvation during the winter and early spring, or, has some poverty-stricken colonies that may merely exist and build up on the main honey flow instead of for it. Such a beekeeper fails to secure surplus honey. The wise beekeeper is beginning to see the light. He realizes that a good solution to the food problem is what is commonly called the food-chamber.

Definition of Food-Chamber

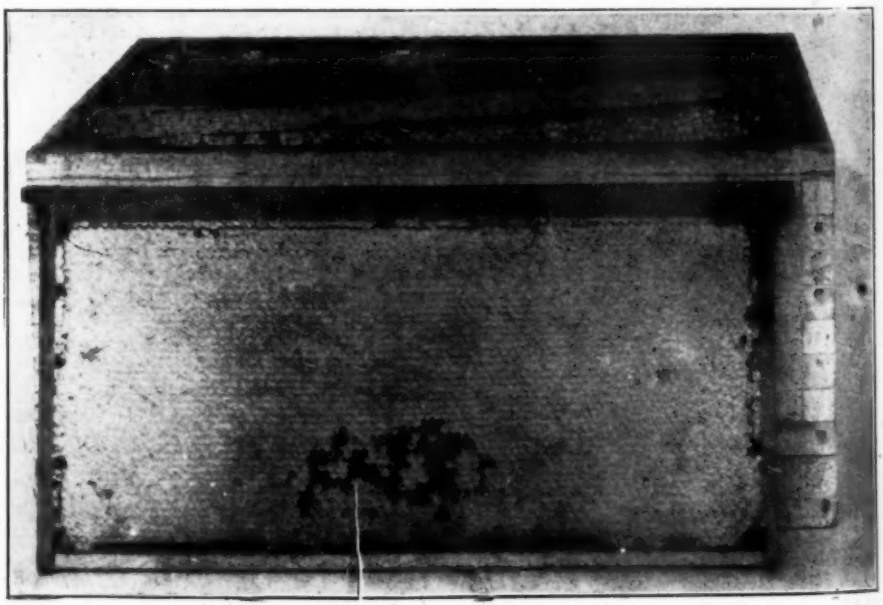
A food-chamber is either a shallow or a deep extracting super containing well-filled combs of capped honey, preferably early-gathered honey—the cream of the crop. This definition needs no elaboration other than to emphasize the two outstanding requirements, namely, quantity (a completely filled super of honey) and quality (well-ripened honey from the cream of the crop). In warmer regions where bees can fly every few days during winter, quality is of less importance.

There is nothing mysterious about a food-chamber hive. It is simply a two-story hive instead of a single-story hive, the upper story being a permanent part of the hive equipment. This requires no new or special equipment unless the beekeeper is producing comb honey and has no extracting supers. However, the majority of comb-honey producers find it necessary to allow each colony to breed up in two stories in the spring prior to the main honey flow in order to produce populous colonies. If colonies are in single-story hives in the spring and one wishes to provide a food-chamber for each, he simply sees to it that the first extracting super that is filled, is reserved as a food-chamber. The proper time to get the food-chamber filled is during the first major honey flow.

How to Use the Food-Chamber

The food-chamber hive lends itself naturally to different methods of manipulation during the main honey flow. There are at least four methods.

METHOD NO. 1. The surest way to get the food-chamber jammed full of honey is to place it above an excluder during the main honey flow and keep it either on top of the pile of supers or somewhere among them. This, of course, necessitates considerable lifting of the food-chamber during the honey flow. When we first be-



The food-chamber is simply a hive body well filled with honey.

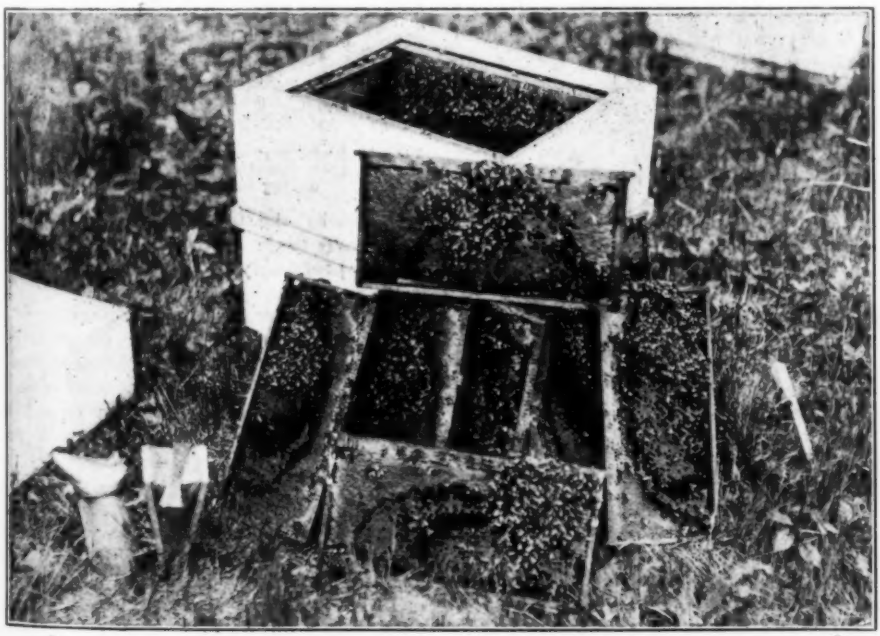
gan using the food-chamber we kept it on the top of the pile. This method seems to be preferable where there is a honey flow of comparatively short duration, as, for example, in some alsike and white clover localities where there is little if any sweet clover and no fall honey flow of any consequence.

METHOD NO. 2.—This method consists of leaving the food-chamber directly on top of the brood-chamber during the honey flow, in fact during the entire year, thus giving the queen access to two sets of combs. The queen-excluder is placed directly on top of the food-chamber, and supers are added as needed. This method would hardly be applicable to comb-honey production. This manipulation of the food-chamber, which is by far the simplest, seems adapted to sweet-clover localities where the honey flow is long-drawn out and tapers off gradually toward its close.

At the beginning of the major honey flow there is, as a rule, considerable brood in the food-chamber. As the honey flow continues and this brood emerges, the combs in the upper story are filled with honey and the queen is crowded down into the lower chamber. This is exactly as it should be, because we want the upper chamber filled with honey at the close of the major honey flow.

METHOD NO. 3.—This method is also recommended for localities that give a long drawn-out honey flow. It is especially adapted to the production of comb honey. When the main honey flow starts and at the time the first supers are given, the food-chambers are removed. When full-depth food-chambers are used, it is usually necessary to sort out enough combs that have the most brood to fill the lower chamber which chamber is left on the old stand. The chamber containing the remaining combs is then placed on a new hive stand or on a weak colony. These food-chambers, as they are removed, can be stacked up five or six high. At the close of the season they will usually be found to be filled with honey. In fact, the pile of supers contains a rousing colony. Later, after all of the surplus honey has been removed from the original hives, these chambers of honey are placed back on the hives from which they were taken.

METHOD NO. 4.—In this method also the food-chamber is removed during the major honey flow, and it is recommended only for localities that give a honey flow of considerable duration. When the main honey flow starts and just before supers



The great abundance of honey stimulates heavy spring brood rearing. As honey is consumed, part of the food-chamber is filled with brood.

are put on, remove the food-chamber (which at that time should contain considerable honey, also some brood) to a hive stand placed close to and facing the same direction as the parent colony. Be sure the queen is left in the parent colony. The food-chamber is soon depleted of its old bees which return to the parent stand, but the young bees remain. A ripe queen-cell should then be given to this division. In due time, a young queen will be mated and laying. She will not be permitted to do much laying because honey will be crowded around the brood-nest. This is exactly as should be. The hive is primarily for food not brood. If no queen cell is given, this division will rear a young queen since it has some young brood.

At the close of the main honey flow, when the surplus honey is removed from the parent colony, the food-chamber containing the young queen, is placed back on the original colony. When uniting is done during October, after brood-rearing has ceased, there is usually no fighting. It has been demonstrated that the young queen is the one that survives in the majority of instances. With this management of the food chamber, automatic requeening as well as providing ample food for the colony is accomplished at one stroke. In the production of extracted honey, this method obviates handling the food-chamber while supering during the honey flow. Then, too, when the two colonies are united in the fall, the resulting colony is very strong in bees, which is a major requirement for successful wintering. This method is especially well adapted to the production of comb honey.

Advantage of Getting Food-Chamber Filled Early

I am well acquainted with a beekeeper in the buckwheat region of Ohio. A few years ago, during the clover honey flow, I inquired whether he had his food-chambers filled. He said that he hadn't, but hoped to have them filled from the buckwheat honey flow. I remarked that he might not secure any buckwheat honey that year. He seemed quite sure that he would. Later on in the fall, I asked him if he had the food-chambers filled with buckwheat honey. He said that he didn't because the buckwheat honey flow did not materialize. I didn't say much. Neither did he, but he got the point. The important thing, in my opinion, is that the food-chamber should be filled first and then the beekeeper does not need to worry about winter stores. If he counts too much on having it filled from late honey flows, he may be disappointed.

I have heard beekeepers in buckwheat and goldenrod regions object to the food-chamber, because some of the dark honey in the food-chamber gets mixed in with the clover honey the following season. When the food-chamber is well filled with white honey instead of dark honey, this does not happen. So this is another reason why the food-chamber should be filled early in the season with well-ripened honey, preferably white honey, of good quality.

Lots of brood previous to the main honey flow enables such colonies to store good crops even during ordinary seasons.

Best Size of Food-Chamber

In regions where there is practically no fall honey flow, the full-depth food-chamber is preferable. In localities where there is a dependable fall honey flow, the shallow extracting super is usually large enough. The full-depth food-chamber is growing in favor for two reasons: it is more likely to contain an ample amount of stores and the frames in the food-chamber are interchangeable with the frames in the brood-chamber.

In some regions where the major honey flow comes in the fall, the use of the food-chamber may not seem to be advisable. This is especially true where the

late honey flow is long and the bees practically fill the brood-chamber with honey. However, even in such localities, it may be advisable to reserve at least a shallow food-chamber of honey for each colony.

In the far North, where cellar wintering is practiced and where thick sugar syrup is fed late in the fall, the food-chamber would be rather cumbersome. It can, however, be reserved to be put on after bees are put on their summer stands in the spring.

The two main advantages in using the food-chamber are the tremendous saving in labor connected with apiary management, and the assurance of monstrous colonies of bees ready for the main honey flow. Each beekeeper should know his own locality and adopt a method of food-chamber management that best suits his needs. The following quotation is from an article which appeared recently in one of the bee journals: "Whenever a beekeeper decides to reserve a full-depth super completely filled with well-ripened honey for each colony going into winter quarters, a new beekeeper is born."

Medina, Ohio.

Queen Introduction

Allen Latham

Conditions Under Which Various Methods Give Satisfactory Results. One Safe Method

The various methods of queen-introduction are too numerous to be taken up in one article, though if classed in two or three classes it will be possible to treat them collectively. Most methods are easily brought under two heads, namely, the time-allowing, getting-acquainted method, and the rough-treatment method. A great many of those who practice beekeeping on a large scale have some labor-saving method of queen introduction which depends for its success upon the demoralization of the instincts of the colony. A. C. Miller's smoke method is offered as an example.

It is not for the big beekeeper that I am now writing. I am going to try to help the thousands of small beekeepers, those who own from one up to 30 colonies. Such beekeepers can afford to take more time per colony, and with them delay in getting the queen established does not mean so much. They, unlike the rushing owner of 500 to 1000 colonies, do not mind a method which calls for two, three or even four openings of the hive.

To be sure, it would be a fine thing if we could discover a method of introduction which would work for queens of all sorts, and for colonies of all conditions, and for weather and honey flow influences as well—a method that would work every time, both for the expert and for the tyro. Such a thing is impossible in the very nature of things. Give me the right conditions and I will introduce a queen and have her laying in her new home inside of ten or fifteen minutes, for many a time have I picked up the old queen and dropped a new one right in her place and no bee seemed to know that a change had taken place.

The Scent Theory

This brings up the old scent theory. There are those who deny that scent has anything to do with queen introduction, while others will say that it is a mighty factor. I personally believe that scent has much to do with success, but I do not believe that every queen has her own scent. I am inclined to believe that most queens under exactly the same conditions of age, health, and egg-production have much the same scent. Such queens can easily be interchanged between colonies without any delay in egg-laying. Unfortunately, scarcely one job of queen introduction in 10,000 falls into this category.

Thousands of queens are lost because of the common method of giving a queenless colony the caged queen just as she arrives, attendants and all. The bees do not fight the queen so much as they fight her attendants, but in the mixup the queen is often lost. I have often said that this method of introduction generally accounts for the loss of one queen in every two. The simple removal of all attendant bees without doing any other thing differently will cut the loss down so much that

not more than one queen in five will be lost, and if conditions are favorable not one in ten will be lost.

Yet attendants are to be desired. How can they be given or allowed so that harm will not result? For some three years now I have practiced giving each queen, upon her introduction, from four to six attendants. These bees are young bees selected from the colony itself, bees not over five days of age. I say five days, but must confess that I do not know the exact age limit. One must exercise great care, picking only bees which do not yet show the adult characteristics, or in other words, still retain something of their downiness. After the attendants are put in, it is well to watch the cage for a minute or so. If the attendants show no surprise over the new queen, but at once proceed to feed her, you may know that you have not selected any bees which are well acquainted with the old queen. A queen thus caged with new attendants can be left until the bees automatically release her, and usually after six days she will be found properly laying.

Procedure for Safe Introduction

I think that if anyone desires to follow the method I will now outline, he can be reasonably sure of 100 per cent of success. Instead of using the mailing cage, make use of one of the several introducing cages, selecting if possible one of such a make that its thickness does not necessitate any spreading of the combs. Having prepared the cage, hunt up the old queen and remove or destroy her, then select a few young attendants to be run in with the new queen. So fix the cage that no bees can get into it nor be able to release the new queen. This can be done by tacking a piece of tin over any opening, or otherwise stopping it. Hang the cage thus prepared right in the middle of the brood-nest. Three days later examine. If no bees are balling the cage or biting at the wires, remove the tin so that bees can get into the cage and release the queen. Replace the cage and do not disturb for at least five days. If, however, upon that first examination you see evidence of animosity towards the new queen, replace at once and wait two days more before looking again. Usually all animosity will be gone by that time and the bees can safely be allowed access to the candy of the cage.

Sometimes there is so much delay that there are ripe queen-cells before the queen can get out of the cage. This does not occur unless the queen is caged over a week, which is very infrequent. If it does occur, one must remove every comb of brood and destroy every queen-cell; otherwise a virgin may emerge before the new queen gets opportunity to tear holes in the cells. In a duel between a virgin and a laying queen, the latter is seldom the victor. Queens are now very low in price, yet even at present prices it does not pay to have new queens killed.

Many Queens Lost Without Beekeeper's Knowledge

Many a queen is lost and the beekeeper never knows it. Not a few cases have occurred in which the queen breeder has been upbraided for sending a mismated queen, while that mismated queen never came through the mails. Unobservant beginners in beekeeping can easily overlook the fact that a virgin is present in a hive or a ripe queen-cell may be overlooked. Ten days later a queen is found laying and all seems to be right, but three weeks later mongrel worker bees appear. I am inclined, therefore, to suggest the wholesale practice of wing clipping.

Some years ago I sent four tested queens to a beginner and a week or so later he wrote me a very saucy letter to the effect that I had sent him virgins. Even an old beekeeper who was helping him upheld him in this contention. I positively know that I sent laying queens, in fact they were all queens of the previous fall months and when taken were heading small colonies in my home apiary. It was not possible for me to make a mistake. I never got any satisfactory explanation, but am inclined to think that this beginner had kept his colonies queenless so long that they were just getting virgins when he introduced those layers. Had he clipped each queen he would not have seen one of them taking flight when he opened the hive as he thought. In his letter he asserted that when he opened a hive one of the queens I sent took flight!

It will be noted in the sure method which I outlined that the new queen is given when the old is removed. This is not essential and, in fact, further safety to the new queen will come if the colony has been queenless for three days prior to giving the new queen. In this case one need wait only 24 hours before the first examination to see if all is quiet about the cage.

When the colony is dequeened for three days prior to introducing the new queen, many prefer to give a cage which allows immediate access to the candy. The colony is then not disturbed for five days, at which time the queen is usually found to be laying. This saves some labor, but not much, and in the case of very irritable bees, it is not safe.

Some bees are so mean that they will ball a cage containing a new queen for several days. Yes, some bees are so mean that there seems to be no method of requeening them. They will even kill a newly mated virgin upon her return, even though she was reared right in that hive. If this newly mated queen is not killed on her return, she often will disappear within a week or so. Most beekeepers of many years of experience have had colonies which would kill queen after queen. I have finally become so angry over such a colony that I have sulphured them and then put in a pound or so of new bees with a queen.

Norwichtown, Conn.

Many Obstacles to be Overcome

Dr. E. F. Phillips

Developing Russia's Gigantic Beekeeping Enterprise Will Not be All Smooth Sailing

The output of comb-foundation machines in the Soviet Union is given me as a little over 2000 pounds a day for each milling machine, with less capacity for the sheeters. They claim to have eight such machines now in operation and have plans to bring this number to fifty in the near future. If all fifty machines were now ready, and if none of them break down within the next five years, they must work almost two shifts every day to carry out the present plan. But not all the machines are ready, and it will be months before the last ones are operating, so that toward the close of the Second Five-Year Plan, the comb-foundation factories must run three shifts a day and forget about Rest Days (there are no Sundays in the Soviet Union). There will be no time for repairs to disabled milling and sheeting machines.

Involves Training of Half Million Beekeepers

The training of nearly a half million trained beekeepers is no small task. There is a correspondence school in Moscow, op-

Russian peasant types. This photograph was made before the Revolution, so the clothing is too good for present conditions.

erating throughout the Union, which conducts correspondence courses in beekeeping, and now has 4,500 persons taking this course. There are probably a few beekeepers at present who can increase the colonies under their care, either by assignment to a larger apiary or by an increase in skill through practice, so that some of the proposed increase in the number of skilled beekeepers may not be necessary. There are six agricultural colleges which offer practical courses for beekeepers, planned to train students for the management of collective apiaries, but the number of those taking these courses is not known. Since skill in beekeeping will be required about as soon as the increase gets well under way, there is a great rush about the training of beekeepers, far more than in the making of supplies, for there must be somebody to handle the bees before the hive-bodies and comb foundation are put to use. This means for the first years of the Second Five-Year Plan the training of at least 100,000 skilled beekeepers a year, if the Plan is to succeed. It is obvious to everybody connected with the beekeeping program that the training of beekeepers is their greatest task.

The transportation of the equipment from the factories and of the filled hives to their final locations is a terrific undertaking. The roads in the Soviet Union are notoriously poor, usually consisting of a space about 150 yards wide between fields on the collective farms. Through this strip the carts, camels, and horses wander to avoid mud and the rougher spots. To move 35,000,000 colonies of bees on such roads would cause anguish to an American beekeeper, but the beekeepers of the Soviet Union are accustomed to such roads and they transport bees on them at any season without a qualm.

Many peasant women can now read. Photo from American Russian Institute

Camels have been used for centuries for moving bees in the Far East, and this

A log-hive apiary in the Caucasus. The beekeeper was an orthodox priest.

is said by some of our friends in the Soviet Union to be the safest and best method of transportation of colonies. Camels might then properly be included in the equipment of some of our migratory beekeepers to advantage. I am not sure how far an American beekeeper would be justified in walking for a camel to carry bees, but if the camel transports bees, a slow moving donkey might do for the transportation of the beekeeper. I saw camels in the southern part of the Soviet Union, but none of them were carrying bees at the time.

To think about beekeeping in terms of colonies by the millions is not easy and the task of manufacturing enough equipment would be an unfamiliar problem to our supply houses. The beekeeping part of the Second Five-Year Plan is gigantic in proportions. It is the plan to use honey at home and also to export it to other countries. There is already an office which has for its function the preparation of honey for export and the management of foreign sales. If it should happen that all forty million colonies are created, and unless the domestic demand for honey improves, it seems probable that at least some European countries may have honey dumped on them.

Cost of Production Eliminated Under Communism

Beekeepers and everybody else engaged in the production of some commodity in the United States and in other capitalistic countries must give serious attention to costs of production. Under a capitalistic system of social, political, and economic life, one must bring production costs below the price received for the material produced, otherwise there is no profit, and without profit, a producer can not remain long in his business under capitalistic conditions. All this is looked upon quite differently in a communistic state. If an article of material is needed, it is produced, regardless of production costs. To cite one example, it requires over 100 man-days to produce a tractor in one of the Soviet factories which we saw. If tractor manufacture involved any such expenditure of human labor here, few farmers could afford to buy tractors, regardless of wages paid to employees of the tractor factories. In the Soviet Union, on the contrary, they realize the need of tractors and proceed with their manufacture, so far with less attention to the human labor involved in the manufacturing process than to the demand for tractors for the collective farms. Naturally they have as their goal a reduction in human labor, as is indicated by their desire to mechanize their farms, but in the building process, labor costs figure only slightly in their plans.

A Tremendous Expenditure of Labor

From the viewpoint of an extensive American commercial honey producer,

Ukrainian apiary with hives built of straw, and an ancient log hive in the background.

production costs of honey in the Soviet Union must be terrific. One of the vital problems of a commercial beekeeper is to reduce the hours or minutes of human labor for each operation in the apiary and honey house, and some of our beekeepers have whittled down the time required for their operations to the point where further reductions seem impossible. Some friends of mine who are engaged in extensive honey production thought three years ago that they had eliminated wasted minutes to the minimum, yet when the depression brought on lower prices for honey, they have been able to cut time in some cases to one-half what they were three years ago. One beekeeper friend of mine operates almost a thousand colonies with his own labor and that of a boy of high school age, and made money even in 1932 because of this reduction of labor costs. Another friend operates eight hundred colonies with the aid of a young man. In contrast to these low-time consumptions per colony, there may be cited a system of apiaries which I visited in the Soviet Union. At the time of my visit there were 1033 colonies under one management, but it was proposed considerably to increase the number this past summer and ultimately to get into thousands of colonies. To operate these bees, there were a director, an assistant director, a technical director, a secretary and thirty beekeepers, and apparently all of them were then quite busy.

It is the boast of the communists that there is no problem of unemployment in the Soviet Union. It is true that there are people enrolled with their labor agencies (operated of course by the government) who are not now employed, but these persons are chiefly women who were formerly housewives who now seek employment in order that they may play their part in the vast plans of the Union, or to gain additional income for their families. There are apparently few persons who have been regularly employed who do not now have employment. The reason for their success in eliminating problems of unemployment may perhaps be that their labor is not as efficient as that of bustling Americans. To make such a suggestion must not be considered as a criticism of a visitor with capitalistic tendencies, but this criticism was made of the people of the Soviet Union by Lenin, their former great leader. He said that the aim of the communists must be to equal and to surpass the efficiency of capitalistic America. The people of the Soviet Union are virtually all aware that so far they have not accomplished this aim, and their failure to meet such requirements are everywhere evident to a visitor.

A discussion of the beekeeping plans for the next five years may not appear to be a proper place to mention the evident waste of labor in factories and on farms in the Soviet Union, yet it is clear that such waste of labor must be eliminated so far as beekeeping is concerned if the plan is to be a success. The labor involved in managing so many colonies necessitates either greater efficiency per beekeeper or an enormous increase in the number of beekeepers, and it would seem easier to augment efficiency than to train so many people in beekeeping. It would consume too much space to relate such lacks of suitable organization of factory operations as I happened to see.

It is also clear that a visit to the Soviet Union in order to have a glimpse of their beekeeping operations does not provide opportunity to study factory management with that thoroughness which might be considered desirable. It should also be confessed that I do not happen to be an efficiency expert. In spite of these drawbacks, I saw evidences in isolated cases of a waste of labor and time in factories such as would cause an American factory so run to close its doors in a couple of days. No such closure is inevitable under a communistic system of society, where production costs are less important than a certain degree of ultimate progress in the industry in question.

Greatest Obstacles in Way of Success

The ability of the government of the Soviet Union to meet the high requirements in beekeeping which it has set for itself and for its people will depend on (1) the feasibility of the plan itself as an agricultural enterprise, and (2) the capabilities of the people engaged in this work to meet the high requirements. I have far less fear for the efficiency of the plan than I have for the abilities of the men to carry it out on time. I do not for a moment question their intent or their ardor for the plan, only their efficiency in so organizing their work and in so eliminating waste of human effort as to make things move on time.

I naturally discussed these questions with the men in charge of the vast beekeeping enterprise, and in keeping with the communistic policy of encouraging criticism, I spoke freely to them of my fears and of the enormity of their undertaking. I should emphasize the fact that they took any critical suggestions in the best spirit possible, with open minds, with freedom to come back at me with arguments, and always with the kindest spirit. I made bold on one such occasion to express my personal view that under any system of social or political or economic life, effectiveness of human labor is the most important consideration. This appears to me to be neither a capitalistic or a communistic conception, just a stating of an obvious fact regarding human endeavor. It was on such grounds that I rendered an adverse opinion regarding their plans for the use of incubation, to be described later, and similarly it was for such reasons that I advocated eliminations of surplus and of what appeared to me to be useless and wasted labor in other phases of the beekeeping work.

Ithaca, New York.

Control of American Foulbrood

Edwin J. Anderson
Extension Bee Specialist, Pennsylvania State College, State College, Pa.

Prompt, Careful and Drastic Action Necessary in Dealing With This Scourge

American foulbrood is one of the major problems of beekeeping, especially in those sections where the disease has become well established. The control measures directed against it are handled in numerous ways by different beekeepers with no consistency evident in practices used. This is true especially of those who discover the disease in their apiaries for the first time and wish to save as much as possible of the diseased colony and its equipment. The inexperienced beekeeper in his efforts to save often unknowingly spreads the disease throughout his apiary even though he is making a conscientious effort to keep it under control.

One instance of this kind is recalled where a beekeeper from central Pennsylvania found many recurrences of the disease each year. There were no other diseased apiaries near his yard from which the trouble might come. After analyzing every possible source, he finally traced his trouble to the partly filled bait sections which he had placed in empty supers each spring. Numerous cases could be sighted where the disease was spread throughout the apiary in various ways, for instance by robbing as combs were cut from the frames or by the drifting of bees at the time the diseased colony was treated, or by moving supers or frames from a diseased colony to other colonies.

In this article I do not wish to initiate any controversies with those who practice different methods of control. I wish only to give a few hints which should be of value to those who have recently discovered American foulbrood in their apiaries or to those who are meeting unusual trouble in their efforts to bring it under control. These recommendations must be adapted to the conditions of the apiary in which they are to be used. Some of them may not be entirely applicable to the large apiary because of the time factor or because of complications introduced through the manipulations of numerous out-apiaries.

Inspectors Can Not Take Time to Save Bees of Diseased Colonies

The writer believes strongly that, in localities where inspection work is in progress, the inspectors should completely eliminate in so far as possible all traces of disease as the work progresses. In other words, when the inspector locates diseased colonies he should kill the bees with some poisonous gas, then burn the entire contents of the hive in a hole in the ground. If the diseased colonies were to be treated by the inspectors, too much time would be lost in assembling equipment and treating colonies so that only a very limited area could be inspected each season. If diseased colonies are left behind by the inspector to be treated by the beekeepers, those not experienced in

handling disease would often spread it while treating the colonies and in that way nullify the benefits which might otherwise be accomplished through the inspection.

Every beekeeper should understand the nature of the bacteria causing American foulbrood and the different ways by which the disease may spread to other colonies. The beekeeper often fails to appreciate the ease with which the disease spreads from one colony to another or from one apiary to another. One need but look around in areas where the disease is established and in new areas of infection to appreciate the heavy toll which can be exacted by American foulbrood and the rapidity with which it may spread. The spores of American foulbrood are extremely resistant and will withstand a moderate amount of boiling. They will live in the hive longer than fifteen years under ordinary conditions. They may be found in any part of the hive of a diseased colony and a single drop of honey from the diseased colony if carried to another hive may cause disease in the new colony.

Once American foulbrood appears in a colony every bit of honey, comb, and equipment from that colony must be considered extremely dangerous and must be handled with the greatest possible care. The bacteria are invisible to the eye so that the places in which they are present or absent can not be determined. Some of the honey from the hive of a diseased colony may be free from foulbrood germs. Since, however, that part of the honey carrying American foulbrood spores can not be separated, all the honey, whether it be in the hive body or the supers must be considered a potential source of danger. This danger is greatly increased because of the robbing instinct of the bee. Honey from diseased colonies should be destroyed when the colony is treated, otherwise, a few robber bees may get to it in some purely accidental manner and start the trouble all over again.

Importance of Detecting Disease in Early Stages

The first essential in the successful eradication of the disease from an apiary is to find the disease in an early stage of its development and immediately to eliminate or treat all material and equipment which might spread it. When the presence of American foulbrood is suspected the apiary should be examined for disease three or four times a season. When it is found the colony should be treated at once to prevent its spread to other colonies either through robbing, drifting, or by moving combs to other colonies.

The safest way to treat a colony is to close up the hive at a time when bees are not flying and destroy the bees with one of the poisonous gases recommended for this purpose. As soon as the bees are dead, take the hive to the place where a fire is burning in a hole in the ground and dump the entire contents of the hive into the fire. If the hive is in bad shape or of a size not desired, or is a box hive, it also should be burned along with the bees and

Fig. 1.—A clean hive containing frames of foundation is placed with its entrance just above and at the back of the hive of the diseased colony.

honey. If the diseased material is not burned in a hole, honey from the melting combs will run off where it can be gathered by robber bees. The hole for burning diseased material should be about a foot deep. When the material is burned, cover the ashes with dirt. If the hive is worth saving, scrape it free of comb, wax, and propolis and burn this material in the fire. Then scrub out the hive parts thoroughly with a stiff-bristled brush, using a mixture of one-half water and one-half commercial formalin as the disinfectant. Work with formaldehyde should be done out of doors and care should be taken to protect the hands against its burning effects.

Saving Bees by Driving From Diseased Hive

There are times when the beekeeper may wish to save the bees as well as the

hive, If, however, only a few colonies in a large apiary are diseased, to save the bees would be unwise because of the danger of spreading the disease during the process of treating. In areas where the disease is well established and when a large per cent of the colonies in an apiary are diseased, the beekeeper may be justified in saving the bees. The value of a diseased colony is greater if the disease is found in the early stages of development and at

Fig. 2.—By smoking at the entrance and drumming on the side of the hive, the bees are driven from the diseased combs into the clean hive.

an early date in the season when there is a possibility of the colony storing a surplus from a late honey flow. When disease is discovered late in the season, the bees as well as the contents of the hive should always be destroyed.

Treating must be done with great care to prevent drifting and robbing. One way to prevent robbing is to work with the bees on a cold day or at night when they are not flying. At such times, however, the bees are especially nasty and difficult to handle. When bees are treated by shaking them from the combs in front of a new hive the danger from robbing is serious. The combs are exposed for a considerable period of time and honey is often shaken from the combs to scatter about where robbers have easy access to it.

A much safer way to handle the colony during the process of treating is as follows: Remove the lid of the diseased colony and shove the inner cover forward about one-half inch so as to leave a narrow space for the bottom-board of the new hive. Place the bottom-board of the clean hive containing the starters or sheets of foundation on the upper rear edge of the hive body of the diseased colony (Fig. 1). Place a box or supers as needed under the rear of the clean hive to keep it nearly level. Leave the lid or inner cover on the clean hive. The bees will run into the new hive quicker if it is dark inside.

Blow considerable smoke into entrance of the diseased colony, then remove the inner cover. Continue to smoke the bees heavily and drum on the side of the hive so they will not have time to load up with honey. They will soon start to run

Fig. 3.—The combs from the diseased colony are then burned and the ashes covered with dirt.

up to the top of the hive. As they come up drive them into the entrance of the clean hive. To do this, blow a little smoke occasionally over the bees as they run over the frames. Direct the smoke around the front end and sides of the hive body to drive the bees into the clean hive. Be careful not to blow any smoke near the entrance of the clean hive. The bees will then be driven ahead of the smoke and into the clean hive. If the colony is strong, 15 or 20 minutes may be required to drive the bees into the clean hive. When all have been driven out of the diseased hive close the top and entrance of this hive quickly and take it to the fire. Throw the combs on the fire in the hole, then treat

the hive with formaldehyde as explained before. Fire is recommended by some and may be used as a means of sterilizing the hive. This treatment, however, leaves the hive charred and unsightly or is accompanied with some danger if gasoline or oil is used. If the diseased colony is more than two bodies high it will be impractical if not impossible to drive them in this way.

Diseased colonies are commonly found on either side of a treated colony a few weeks after the diseased colony is treated. The writer attributes many of these cases of disease to drifting of young bees at the time the colony was treated.

The entrances of two or three hives located on either side of the colony to be treated should be closed so that drifting bees can not enter. After the diseased colony is treated and the clean hive with the bees has been placed on the old stand, blow a little smoke over the bees clustered about the entrances of the closed hives. The smoke will drive any drifting bees from the clean colonies back to their own hive. The entrances to these hives may then be opened.

Suggestions for Preventing Spread of Disease in Apiary

The following is a list of precautions which should be of value in eradicating American foulbrood from the apiary.

1. Number the supers the same number as the hive on which they are placed, then if foulbrood is found in the hive after the supers have been removed, the supers may be treated accordingly.

2. Return the supers as far as possible to the same hive from which they were removed.

3. Do not use bait sections. Extract the honey, melt up the wax, and burn the sections.

4. Prevent robbing.

5. Do not use bee gloves.

6. Be careful that honey is not carried from a diseased colony to a normal colony, the hive tool, the smoker, the hands or hive parts.

7. Do not treat weak or badly diseased colonies, kill and burn the bees with the combs.

8. Eliminate all diseased honey and treat all equipment from diseased colonies immediately after the disease is found so there is no potential source of danger in the apiary, the honey house, or the home.

After a colony has been treated for foulbrood it may become discouraged and abscond. Place an entrance guard over the entrance so the queen can not leave. If the colony is treated at a time when nectar is not found in the flowers, sugar syrup will have to be fed to prevent starvation.

State College, Pa.

Dr. C. C. Miller and His Family

E. R. Root

Passing of the Last Members of This Great Beekeeping Trio

For the benefit of some of our later readers it should be stated that Dr. C. C. Miller, Marengo, Illinois, from about 1880 to 1920, the year of his death, was probably the best known beekeeper, not only in the United States but also abroad. He was not a great inventor, nor a bee-supply manufacturer, nor even editor of a bee journal; but he was pre-eminently a great teacher in the realm of bee culture, the greatest of his day. There was no broadcasting over the radio in those days, but in spite of that he was quoted probably more than any living beekeeper of his time.

While he did not broadcast, he spoke through all the bee journals of America and Europe. He could read and speak French and German, was a regular reader and frequent contributor not only to bee journals but to agricultural papers all over the world. He wrote particularly for Gleanings in Bee Culture and the American Bee Journal. In the former he had a department known as "Stray Straws," made up of short, pithy paragraphs that fairly sparkled with wit and good nature. There was a smile in every paragraph, yet whenever necessary he could differ from a brother beekeeper and do it in such a way that the other fellow would feel highly complimented.

Dr. Miller and Mrs. Miller as they appeared late in their lives.

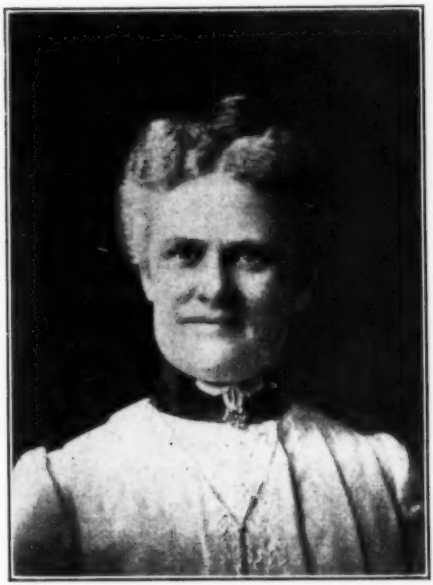
Broke Record in Honey Production at 83

One who commanded the respectful attention of large audiences not only in this country but in all Europe must have had something about him above the ordinary that could compel us to sit at the feet of such a Gamaliel. What was that something? First, he had a most wonderful personality that bristled with smiles; second, he was an honest-to-goodness beekeeper who made his bees pay his way through life. Even at the age of 83 he broke the record in comb-honey production with an average of 266 sections per colony, spring count. This he accomplished, in spite of a voluminous correspondence, and his church and Sunday school work, with only a single helper, his sister-in-law, Miss Emma Wilson, to whom reference will be made later. His wife helped occasionally among the bees during the rush.

At the time of his death, September, 1920, it was proposed that beekeepers should erect a monument over his grave, as was done in the case of the Rev. L. L. Langstroth; but Dr. E. F. Phillips, then of the Bureau of Entomology, Washington, D. C., proposed a more lasting and more useful monument in the form of a Dr. Miller Memorial Beekeeping Library. This was established at the University of Wisconsin, with Professor H. F. Wilson in charge.

A Remarkable Beekeeping Family

And now let us turn to the two other members of the family, his wife and her sister, Miss Emma Wilson. These two women, as noted in our last issue, both passed away recently, Mrs. Miller on



Miss Emma Wilson, Mrs. Miller's sister. She was Dr. Miller's assistant in the apiary.

March 20 and her sister on April 1. They were so closely associated that the passing of one meant the passing of the other within a few days. I believe I am quite within the truth when I say that it was these women who helped the "Sage of Marengo" to become the great teacher in bee culture that he was for a period of fifty years. It was his wife who looked after his health, who induced him to rest during mid-day, who looked so carefully after his diet. It was her sister, Miss Emma Wilson, who was his right hand assistant in the bee yard and who helped him to come to some of the conclusions that were so helpful to the outside bee world. Miss Wilson wrote a series of articles for both the American Bee Journal and Gleanings in Bee Culture. She did not always agree with Dr.

Miller and sometimes I have heard the two in a friendly argument, but sooner or later they would agree. Neither were physically strong, both had to guard their health, and both had to find ways to save steps, save labor, save general expense.

After working in the apiary until they were tired, Miss Wilson would say to Dr. Miller, "We have done enough now, we must sit down and rest for a short time." Then they would pull out their record book and see what was to be done next. They were very systematic. They kept a record of each colony and before starting out for the day's work, they would consult that record in order to know exactly what to do when they arrived at an outyard.

So carefully did these women conserve the strength of Dr. Miller that he lived to be almost 90 years old. Some of us who called on him just two weeks before he passed away, know that his mind was as vigorous as ever and that he did not look to be over 60. His words had all the sparkle and the good will that were so characteristic of him through life.

Although I read everything that Dr. Miller and Emma Wilson wrote, I felt that it was necessary for me, as did Mr. Geo. W. York, then of the American Bee Journal, to go to Dr. Miller's home once or twice a year. When we came away we felt that we had picked up something that would elevate beekeeping in our respective journals as well as something that would make life more worthwhile. There was a deep religious atmosphere in the Dr. Miller home. They were Scottish Presbyterians, or what we now call the fundamentalist type. Higher criticism, modernistic ideas of God and Jesus Christ had no place with Dr. Miller and his family.

A Visit With the Miller Family

In the early nineties I bought one of the then-modern pneumatic-tired bicycles. I had ridden it all the way to Chicago, very proud of the fact that I could go this entire distance, 350 miles or more, on mere leg power. I stayed in the city over night, and the next day after resting up, I started out for Dr. Miller's home, part of the way on pavement but most of the way on common clay road, some of it with deep sand. I lost my way but after a roundabout sort of detour, landed at Marengo about half past ten at night. I inquired of a boy on the main street of the town how I could find the Miller home. He pointed to the road and said: "Take that road and keep on for about a mile. On the right hand you will find a house on a hill considerably back from the road. In front of it are weeds and things."

I knew it would never do for me to stay at the hotel that night as Dr. Miller and his family would never forgive me, so I pedaled one more mile. Arriving at the house I knocked at the front door. I remember Dr. Miller's familiar voice,

(Continued on page 375.)

The Miller family at the Miller home. These three old people took great delight in their flowers and bees during the latter years of their lives.

Foraging for Honey as Told by One of the Boys of '61.

One day a fine car drove into our yard and a spry old man alighted whom I recognized as an old soldier. He had dropped around just to have a chat. As it was late in the season and there was nothing pressing to be done with the bees, I was glad to chat with him for his stories of the Civil War were never of the hardships and suffering, but of the amusing incidents of which he said there were plenty if you kept your ear to the ground. He began:

"I never see a bee hive that it does not remind me of an incident during the war when a tent mate and I went foraging for honey. We were camped on the Tennessee River near Florence, Alabama. Just across the river from our camp the rocks ran up perpendicular for, I should say, 150 feet. Many springs came from the rocks and the water dripping down was the coolest and best I ever drank, it seemed to me.

"One day my tent mate and I took a ramble through the woods beyond this rocky precipice and discovered a farm house near which were half a dozen beehives, if you could call them that. Some were gum logs that had been brought from the woods with bees in them and some were boxes. By the way the bees were coming and going, we knew that they must have honey.

"There were strict orders against foraging, and this southern woman would not sell us anything. As she put it, 'not to save your tarnal necks,' she wouldn't. However, we were terribly sick of a diet of hardtack, black coffee, and sow bosom. It seemed to us we would give anything for some honey. We were willing to risk being shot by the southern woman and being courtmartialed by our officers.

"My father used to keep bees in Ohio so I knew a little about them, and one dark night about 12 o'clock we stole out of our tent and made our way to the farm house. We hefted the hives and chose a box that contained at least 50 pounds of honey. I stopped up the entrance, then we carried it back into the woods where we smoked and burned the bees and cut out the honey. Honest now, I never knew any food of any sort could possibly taste as good as that honey. It must have been extra good honey, and I wish I knew what the bees made it from. We got stung on the fingers quite a good deal, but that did not bother us much. After eating our fill we wrapped the rest of the white honey in a cloth and made our way back to camp where we hid it in our tent.

"Next morning just about as soon as we were up, we got a summons to appear before the captain. How he found out about our escapade, we never were able to find out. He greeted us with, 'So you have been foraging again, have you?' My tent mate replied, 'Again? This is the first time.' 'Oh, ho, then you admit it, do you?' I poked my partner in the ribs but it was too late.

"The captain had the goods on us. He told us he would attend to our cases a little later and that in the meantime we must

We smoked and burned the bees and cut out the honey.

bring him the stolen property. We did so after again helping ourselves. Now there were quite a number of bees mashed up in the honey, some of them more or less alive. We were careful to pick them out when we were eating the honey but the captain did not understand this; evidently he was as hungry for honey as we were, for in eating it he got a live bee in his month; and did he get a mouthful? Well, now, I guess!

"After a time we heard the command, 'Clumpany flall in.' Some of our comrades did not know what that meant but a few of us lined up and the rest followed. The next order was, 'Light dless.' Most of us knew what the command should be so we dressed up to the right. Next the com-

(Continued on page 380.)

From the Field of Experience

ANOTHER USE FOR CARBOLIC ACID

Neat Method for Driving Bees from Diseased Hive Into Clean One

Last year, in an article in the July issue of Gleanings in Bee Culture, I gave the proportions of water to be mixed with carbolic acid when using it to take off supers. I have found, however, that it is better if the acid is used without surplus water, that is, with just enough water added to keep it from crystallizing. It takes about one part of water added to five parts of melted acid to prevent crystallizing. Then control the strength of the acid on the screen by sprinkling on more or less. In warm, sunny weather make the cloth barely damp. In cool or cloudy weather, use enough acid to make the cloth fairly damp.

With the coming of spring, the bugaloo of American foulbrood will be showing itself. So far, burning is the best cure, especially where the amount of disease is small. Where the infection is heavy, however, it's a considerable saving if the bees can be saved. We know that shaking is effective if done carefully, but the catch is in the "carefully." It is almost impossible to prevent robbing or smearing honey when shaking combs of honey and brood. If shaking is done during a honey flow, nectar splashes out of the combs like rain. If done when no honey is coming in, there is robbing.

Here is where my pet, the carbolic screen, comes in. Instead of tearing the hive apart, and shaking and brushing bees off the combs, it is far easier and cleaner to drive the bees from the diseased combs with a carbolic screen, driving them into a clean hive that is placed underneath. I have never tried it for that purpose, but many times in taking off honey with the carbolic screens, I have left them on the hive longer than intended, the result being that the bees were driven not only out of supers but also out of the brood-chamber, so that they clustered on the outside of the hive. There has never been evidence of any permanent effect on the bees.

The process would simply be that of raising up the diseased brood-chamber box without the bottom and place a clean one underneath. Place a well carbolated screen over the bees and leave it until the bees are all out. On a warm, sunny day, this would not take more than five minutes. Then simply lift off the old brood-chamber, brush off any bees on the bottom edges of the combs, and carry it away to be disposed of. The beauty of it is that there is no robbing even if no honey is coming in, and no handling of combs.—Charles Mraz, Middlebury, Vt.

WHY MAKE SUPERING DIFFICULT?

Placing Empty Supers on Top Instead of Next to Brood Chamber

A few days ago I had a good visit with one of Ohio's best beekeepers. We were talking about the best method of supering for the production of extracted honey. I have so much confidence in the opinion of this particular beekeeper that I like to go to him occasionally to air my opinions, to see if they are in line with his; if they are, I can feel reasonably sure that I am headed in the right direction. As I remember the conversation, I introduced the subject of supering something like this:

"I am going to cut out a lot of foolishness in the management of apiaries devoted to extracted honey production this coming season. In the past I have been lifting up the finished and the partly-filled supers in order to put the fresh supers underneath directly above the queen-excluder. This has meant a lot of hard work, which I have come to believe is unnecessary. For the past two years I have been trying out an easier method of supering. It is so simple that there is practically nothing to it. When the first super is half or two-thirds filled, or, in other words, when the second super is needed, simply place it on top of the first; when the third super is needed, place it on top of the second, and so on. I am convinced that, when conditions are right for bees to store surplus honey, they will store it as readily in a new super on top of the pile, as if placed directly above the queen excluder."

My friend (who by the way is a comb-honey producer) replied: "Jack, I think

you're right. I know a beekeeper who supers exactly that way and he gets big crops of honey. There is something about this method of supering that encourages the bees to do their best work. I remember once during a heavy honey flow of placing some extracting supers with full sheets of foundation on top of comb-honey supers, simply to give the bees some room until I could get back again to give more comb-honey supers. When I got back I found that they had gone up into the supers, had drawn out the full sheets of foundation, and had filled the new combs with honey."

My first experience in adding extracted honey supers on top as needed, occurred in northern Michigan in the wild raspberry region during the season of 1917. I had no drawn combs and, of course, I very religiously lifted off the filled and partly-filled supers in order to place the new super at the bottom of the pile, then lifted the partly-filled and filled supers back on again. I decided to make a test on one or two colonies to see if the bees would fill supers containing full sheets of foundation if placed on top instead of underneath the filled and partly-filled ones. They did, and so far as I could see an equal amount of surplus honey was secured.

During 1929 we had one of the best honey flows around Medina that we have ever experienced. It came on with a bang. We were kept on the run putting on supers. We didn't have time to tear down the piles of supers to put the empty ones at the bottom. We soon ran out of drawn combs and had to use full sheets of foundation. We simply set the supers containing frames with full sheets of foundation on top of the piles. To our surprise, the bees went up into them immediately, drew out the foundation, and began storing surplus honey. As the season advanced and as we had time to work the different yards, we did some re-arranging of supers.

Well, here is one fellow who is going to cut out a lot of hard work of lifting partly-filled supers off and on every time a new super is given. Just figure out, if you will, how many tons you handle in a day by the old method, and how much labor can be avoided and time saved by this simple method of supering. And this is not all. During the honey flow when you are wondering if an apiary needs more supers, you can quite easily tell by taking a peak into the top super instead of lifting down the pile to examine the last one given, which, according to the old method, is at the bottom of the pile.

I would be glad to have readers of this article try out this simplified method of supering on at least a few colonies, if you are not already using it, to see how it works in your locality. It is just possible it may not work, but my guess is that it will, especially if you have drawn combs, very populous colonies, and a good honey flow.—Jack Deyell, Manager of The A. I. Root Co. Apiaries, Medina, Ohio.

A HANDY SWARM CATCHER

One That Can be Used for Carrying Swarms Some Distance Before Hiving

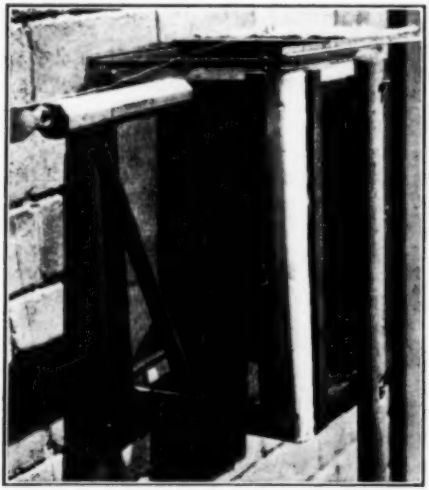
I have devised and used with great success a swarm catcher that enables one to catch with the utmost ease swarms that have clustered in inaccessible places. It also serves the purpose of conveying a swarm considerable distances without risk of the bees escaping or suffocating. It is quite easy to make and the main materials required are: One 60-pound honey tin, two yards of wire cloth, 36" wide, and a few broomsticks. Apertures are cut in the four sides of the can, leaving a strip of tin one inch wide all around them. Gauze wire is nailed over the openings by means of strips of wood ½"x¼".

The top of the tin is also removed, leaving a strip of tin ½" wide all around. Pieces of wood (preferably thicker than that used above) are nailed on these so that they fit nicely all around the upper edge. Two metal hive rabbets are then nailed on two of the pieces of wood along parallel edges of the top of the tin with the grooves facing inwards. They are put on so that two ends come flush with the side of the tin, making the other two ends project about six inches beyond the other side.

A piece of flat galvanized iron is then cut so it will fit nicely between the two grooves formed by the metal rabbets, and just long enough to cover up the opening in the top. It should be made so that it can slide quite freely between the grooves. This sliding lid is also provided with a gauze opening and reinforced with pieces of wood to keep it flat. A small block of wood is nailed on the under side of the lid at one edge to prevent the lid from sliding too far when closed.

The bottom of the tin is cut out altogether and a gauze cone projecting to about two-thirds the height of tin is nailed along the inside of the lower edge by means of strips of wood. A hole about ¾" in diameter is made in the tip of the cone. A string is fastened to the lid and works over a small pulley as shown in illustration.

The catcher is fastened on to a broomstick by means of two bolts. A piece of steel tubing about 9 inches long and just fitting over the broomstick is fixed on to its lower end so that only half of its



Swarm catcher made from a 5-gallon tin and wire cloth.

length is over the stick. Another broomstick can then be inserted into the other half, forming one solid long handle. The length of the handle can thus be increased to suit the requirements by having a few broomsteks ready and fixing them together in the same way as above.

When a swarm is located hanging on a branch, get the catcher as nicely as possible round the cluster and by giving the catcher a sideways jerk, or getting somebody to climb the tree and give the branch a quick jerk, dislodge as many of the bees as possible in the catcher. Get the catcher clear of the branch and close the lid by means of the string fixed to it.

In most cases the queen will be caught with the bulk of the cluster. The bees not yet caught, immediately on missing their queen, will desert the old clustering spot and start going into the catcher through the open bottom. Here they will cluster on the outside of the wire cloth cone and will eventually find their way into the catcher through the hole in the apex. To prevent the bees clustering on the outside

By adding several broomsticks to the handle, the operator can reach a swarm at considerable height.

of the wire cloth panels, pieces of canvas or paper should previously have been nailed over them. If the queen was not caught in the catcher the first time, let the bees cluster again and repeat the operation.

As soon as all the bees have clustered inside the catcher, it can be lowered and put on a flat board a little bigger than the bottom of the tin. This board is firmly tied over the bottom of the catcher and there will then be no danger of the bees getting out again. The pieces of canvas can then be loosened at the bottom so as to provide more ventilation. They should not be removed altogether for the darker the bees are kept, the less fuss they will make.

The bees can then be carried to their new home and hived in the ordinary way. It is best to leave them in the catcher in a cool dark room till nearly dusk, when they can be hived. This will minimize the risk of the swarm taking wing again when the catcher is opened.—G. P. Beyleveld, Pretoria, South Africa.

SPINSTER JANE SAYS—

"Every knock is a boost," so when you get a hard knock don't grouch. Just swallow your chagrin and smile instead. Depression has knocked us all out for the count, nearly, yet if we take Old Man Experience on as trainer, learn what he teaches, and obey him implicitly, there will be a K. O. to our credit at our next bout with Depression. We are rushing along in an age of delirious haste, and we must put on the brakes, skid to a full stop, then creep along, carefully watching the "stop" signs and danger signals.

When dad knocks daughter's young man, it is simply a boost for him in daughter's eyes. Opposition always adds zest to romance. When folks continually knock some one person, look into the matter, and ten to one you will find that person more worthy than the knockers. Their knocking will bring publicity to his worth, and is really a boost.

I was once watching a weak colony of bees, and saw an inquisitive wasp walk in. In a second he came out, much faster than he went in. Not having his curiosity fully satisfied, he went back. This time he came out very wobbly, a bee close behind him, and he did not go back for more. That knock to him was a boost. He learned a valuable lesson, but alas! rather late in life.

Knocks soon prove whether we are thin-skinned or not. If we are, they hurt. Have Spinster Jane's silly knocks hurt any of you awful men creatures? And how about the knocks she gets? Here are a few: One claims she grows monotonous in her talks re the "utter uselessness" of men. Another suggests getting acquainted with a few of them. Still another fears she may become so "acidulated," if she continues in her present frame of mind that she may yet bite herself, and die from infection. Hey fellow! Will not that same acidulation render her immune to all such bites and stings? A sort of counter-irritant, as it were?

Such knocks do help her. They are a real boost. They add a zest to life and give her so many laughs her avoirdupois may yet exceed that of a certain famous radio prima donna.

Beekeepers get knocks galore. There are diseases, heavy losses, low prices, loss of markets, but remember, each knock may become a boost if it leads us to better methods, greater care and vigilance, more pride in our work, etc. Only when you get the first knock, act! Don't wait for a second.—Spinster Jane.

COMMENTS ON CURRENT ITEMS

Referring to the Editor's remarks on spring feeding (page 265), a shortage of stores during the brood-rearing period before the clover harvest is about the greatest setback a colony could have. With a good queen and an abundance of good natural stores we are giving our colonies a great boost in their ability to do their very best in giving us a good crop. If we keep them well supplied with room to store the honey and the season is favorable, we are sure of a good crop. If the plants fail to secrete lots of nectar, we know that we have done our part, and the bees never fail to make the most of it.

There must be honest teamwork to get good returns. We leave a full half story of honey on each colony, and if the brood-chamber is light, we leave two, although they would probably winter safely with one. This is much like the woman who brought her bad boy to the teacher with orders to give him a thrashing every day whether he needed it or not. In other words, we take no chances. Since we adopted this plan a number of years ago, we have not had to coax the bees into the supers.

What a happy looking quartet Prof. Clay Lyle, Miss Chapman, Miss Loury and Mr. Stover are (page 278). Why is it that all the bee workers in Russia seem to look so sad and our folks so cheerful? I wonder.

Mr. Phillips of St. Catherines, Ontario (page 284) tells of a successful treatment of a severely burned face by using a cloth saturated with honey. It would do that very thing. During the great war our base hospitals used extracted honey for wounds and suppurations.

In commenting on an editorial in the April number, Mr. Byer (page 292) agrees that "knocking" the other fellow, like the boomerang, reflects on the "knocker." It reflects not only on the "knocker," but adversely affects every beekeeper in his locality and for miles around. To a large extent beekeepers are themselves to blame for the low prices.—J. F. Dunn, Ridgeway, Ontario.

From North, East, West and South

SOUTHERN CALIFORNIA.—Another month and only a drizzle of rain over much of our bee range in southern California! A few favored localities got as much as 2 inches, but most of the country received less than 1 inch. We sometimes get rain after this date, but the chances are against us.

Bees consumed an unusual amount of stores and came up to great strength early in April ready for the orange or sage had it bloomed at the usual time. There has been little or no black sage, and orange is late with a heavy lot of buds many of which never open. A shortage of rainfall together with cool backward weather has retarded blooming to such an extent that the crop is going to be a great disappointment to many beekeepers that depend on the orange for the principal crop.

I spent a few days in the Imperial Valley recently. In conversation with a leading beekeeper I learned that they expect about their average production, that is, from 60 to 90 pounds per colony. If they could get 4 to 5 cents for it, as seems only just, instead of 2¾, as we understand some of them sold for last season, it would not be such a bad business.

Riverside is celebrating the sixtieth anniversary of the planting of the first navel orange tree today, May 5. The principal events will be near the original tree which is still in fairly good condition. A parade is one of the attractions, and the Riverside County beekeepers expect to be there with a float representing the orange-honey industry.

Honey buyers have been active and have succeeded in gathering up practically all the small lots that are for sale. Although the price has advanced very little, there is a much stronger demand than earlier in the season.

The city of Orange staged a parade for old settlers' day on May 1 and among those present was that sage of California beekeeping, J. E. Pleasants. Mr. Pleasants is 95 years of age and has lived in that vicinity something like eighty years. Although less active than in years gone by, his mind is clear and his memory good. It is a pleasure to hear him tell of the early days in California.—L. L. Andrews, Corona, California.

NORTHERN CALIFORNIA.—We have not had our normal amount of rain, but that is not the cause for our present trouble. We have for the past three or four months given quite a little space to the great eucalyptus region of the Bay District. Authorities tell us that we have in California over 70 varieties of eucalyptus. There are few places in the state where all of the 70 species can be found, but here we have them all. Among these is the blue gum (E-globulus), sometimes called the sugar gum though this honor may rightfully belong to (E Corynocalyx). Anyway, the blue gum is a veritable storehouse of nectar.

By reference to the Lincoln Library we find this said of the blue gum, "It is one of the world's tallest trees, sometimes reaching a height of 375 feet." One objection beekeepers have to this tree is that it is some distance to go for a swarm when bees select the top for a landing place. However this is very unusual; we have had bees in a eucalyptus grove for the past fifteen years and have never known a swarm to choose a tree of this variety. The gardeners object to the tree on account of its enormous consumption of soil moisture. It was once believed that where this tree grew there could be no malaria. It is said to be the most rapidly growing hardwood tree in the world. This helps us to understand why it is not a friend to malaria. Its effectiveness in this respect is now known to be due to its enormous consumption of soil moisture.

Plantations of eucalyptus thrive only in climates permanently above the frost line so when our frost line of last winter took a freak move upward, the tree suffered. How much permanent loss will be sustained we do not know. This much is evident: the honey crop for this year from that tree is a failure. The light extracting is over, and there is a gap of at least three weeks before the flow from alfalfa will begin. How successful we shall be in bridging that gap is yet to be seen.

Beekeepers who have suffered a loss because of the changing conditions caused by a freakish winter in a sub-tropical locality, have gained perhaps by their study of conditions that affect honey-producing plants.—Cary W. Hartman, Oakland, California.

UTAH.—Bees had wintered very well up to the middle of March, then, when brood-rearing should have begun and increased during April, the weather was too cool and there was no pollen coming in. Many colonies became weakened to quite an extent and with the mortality greater than the emerging bees, this spring loss has been greater than the winter's loss.

Lack of Pollen for Early Brood Rearing Caused Great Loss During Spring.

Even strong colonies with an abundance of honey, during weeks of too cool weather, no pollen, and but little chance to carry water, raised but little brood, and small colonies could not hold their own. In consequence there will still be losses during the month of May. Nature's plan is for the old bees to endure until there are young bees to take their place, but death will overtake some colonies yet before that condition arrives. In this climate most all old bees have passed on by May 15. But today, May 4, pollen from dandelion and willow is coming in fast, and fruit bloom will be on in ten days.

In this part of the state, 72 inches of snow fell during the winter. It fell on very dry ground and made only 8 inches of moisture. Our visible supply of water for irrigation is only 70 per cent of normal. But many times when nature has been unkind to us she repents and is very kind to us for a corresponding time.

Now to touch up that picture a little: honey plants are in a good condition; there should not be much swarming; and with seasonal weather and showers from now on we could be surprised with results at the end of the season.

The old crop of honey is well cleaned up and prices locally have stiffened a little. As there has been but little preparation for comb honey in this whole western country, I thought it wise to prepare at least 25,000 sections.—M. A. Gill, Hyrum, Utah.

ARIZONA.—We have had weather conditions of all kinds here lately. We had about five inches of snow about ten days ago, and have had very cold weather for this time of year. During the past few days there has been either rain or snow over most of the state.

The first mesquite bloom that came out here was frozen. Cold weather is holding back the catsclaw bloom, and indications are that stormy weather will cut down the crop considerably under that of last season as the weather is continuing stormy. Stormy weather, just as the honey flow comes on and during the honey flow, always cuts down the crop.

Stormy Weather in the Land of Sunshine Is Interfering with the Honey Harvest.

This stormy weather caught the extracting in the middle of the honey flow in mesquite and catsclaw locations of the Salt River Valley. I have not heard if the honey flow was damaged much or not, but that is generally the case. Extracting will not begin here before the last of May, if then. With favorable weather conditions we usually begin extracting by May 10 to 15. All indications are that rains and stormy weather will continue for several days.

It is the opinion of myself and neighbor producers that we shall have a very small crop here in southern Arizona. Bees have not yet begun to gather a living and feeding is still necessary. It is hard to say just how much longer it will be necessary. It depends on how soon the weather clears up and turns warmer.

Indications are that producers generally will not rush their honey on the market as in the past. Due to crop conditions and prospects of better prices, many will hold their honey for the present. The last honey to sell that was in the hands of producers sold for a dollar a case above prices prevailing the past winter. Though we receive a small crop, we can expect better prices for it. This seems to be the general opinion.—Leslie Wedgworth, Oracle, Arizona.

WYOMING.—The proverbial April showers in Wyoming were white this year. Almost the entire month was cold and disagreeable. One of the most severe spring snow storms in recent years descended upon the state during the later part of the month. Highways were blocked, trains were stalled, airplanes were forced down, and several lives were lost. The snow in most localities was very heavy with a high moisture content. The maximum depth reported in the plains country was 36 inches. Doubtless considerable more fell in the higher mountain

regions. In many sections the snow was driven by a high wind and a real blizzard resulted. Live stock producers suffered heavy losses, especially in regions where lambing operations were being carried on.

Heavy Snowfall in April Supplied Much-Needed Moisture for the Honey Plants.

While the loss to the beemen may be great, it will not compare to losses in other live stock industries. However, as many sections of the state were exceedingly dry the storm brought much needed moisture and should be a blessing to beekeepers from that standpoint. The ground was so dry that most of the water was absorbed as the snow melted and there was very little to run off.

The growth of spring flowers is still retarded by the unusually cold weather. Here at Laramie the dandelions, upon which we rely so much for spring bee pasturage, have just begun to show above ground. According to recent reports, bees are working dandelions and other early flowers in the warmer sections of the state.

Colonies on the winter experiments were not taken from the cellars until April 15. The long confinement of almost five months did not seem to bother them. They were held in the cellars from November 21, 1932, to April 15, 1933. The cellars are situated on the north side of a building and it is possible to keep the temperatures down until late in the spring.

From available information the carry-over of honey in Wyoming will be small if there is any at all.—C. H. Gilbert, Laramie, Wyoming.

SOUTH CAROLINA.—On May 6 I attended a meeting of the Spartanburg County Beekeepers' Association. There were approximately 1000 colonies of bees represented, and all the beekeepers were feeling better over the prospects of a good crop. The spring has been so cold that it looked as if the bees could not build up to proper strength for the tulip poplar honey flow, but in the last two weeks the weather has been warm and the bees have built up to good strength. They are gathering honey very fast and the prospects are good for a big crop.

Beekeepers in the southern portion of the state report that the bees are swarming heavily regardless of the management. I think this is partly caused by having unusually cool nights. They also report that the bees are storing honey rapidly. The queen breeders and package bee shippers are very busy at this time.

A tornado struck in Anderson county and some damage was done around Anderson, but fortunately there were no beekeepers in that area. The heaviest property damage was suffered around Belton. Mr. Ellison, a queen breeder, lives just on the edge of the path of this tornado, but he came through with a very slight damage. In fact, he tells me that he lost only two queens.—E. S. Prevost, Clemson College, South Carolina.

TEXAS.—W. O. Victor of Uvalde, Texas, the most widely known beekeeper in the United States, died April 6. He was born in Camden, Alabama, June 10, 1861. At an early age he came to Wharton, Texas, where he lived until 1905, at which time he moved to Uvalde. Mr. Victor was always a leader. He was a pioneer in long-distance beekeeping in shipping bees from Texas to many points north and returning them again after making a summer crop. He was also a contributor of articles to many of the beekeeping magazines during his beekeeping career.

Beekeeping Conditions Are Spotted and Prospects for a Honey Crop Are Meager.

A more spotted condition has never before existed in Texas beekeeping. The spring was very backward so far as temperature is concerned, and spotted for rainfall. While in small localities rainfall has been heavy, the prevailing north winds have made this spring one of extreme dryness. There were practically no annual spring plants. The bees built up on their old stores and a very meager supply of new nectar and pollen, mostly from shrubs. A combination of circumstances brought into existence a small surplus flow the last week in April which lasted but a short time. The prospects for an immediate honey flow at the usual time are very meager.

Guayacan made a good show this spring, coming into bloom the first week in April. Some few plants are still in bloom. The

bees worked it from daylight until dark but the yield from it was not much more than enough to fill the needs of the growing brood. Mesquite came in with a few scattering blooms but soon disappeared. Our only hope for a mesquite honey flow, and, in fact, for any honey flow, depends on a rain in the near future. Horsemint is coming into bloom in some places but prospects of a horsemint honey flow are poor. In the huajilla district the conditions are somewhat better. The huajilla was badly frozen February 8, but came into good bloom on April 17, and the bees have been working it heavily ever since. The long-flowered catsclaw came in at the same time and the bees have been working both plants.—H. B. Parks, San Antonio, Texas.

WISCONSIN.—The unsettled economic conditions do not seem to have caused any decrease in the number of new beekeepers who are making their first start. In fact, we have had an unusual number of inquiries this spring from people who wish to start out with a few colonies to produce honey for their own use. A few of the old-timers have signified their intention of quitting, but perhaps an equal number of the old beekeepers have signified their intention of buying some package bees and making a new start.

In March, we sent out a circular letter to members of the Wisconsin Beekeepers' Association, requesting information on the occurrence of dysentery. The reports have been quite varied, some reporting that no dysentery had appeared, while others reported from a little to considerable among bees in the cellar. More recent reports show that dysentery began to show up just before it was time to put the bees out of the cellar, and some loss in colonies as well as in the number of bees has occurred.

The prospects of a crop from clover are poor, although in some areas new seeding of clover seems to be in better condition than a year ago. Continued rains in April should produce better nectar secretion in all plants this season. The weather through April has been quite cold, and brood rearing has not gone on as rapidly as might be desired. Because of the cold weather, many beekeepers have not been able to make a close check on the condition of the colonies, and it is yet a little early to get definite information on the condition of the bees throughout the state.

There are still a few large lots of honey in the hands of the beekeepers, and honey has been moving only fair in spite of low prices in 5- and 10-pound pails. A good deal of Wisconsin honey has also brought somewhat lower prices because of cloudiness. This cloudiness is attributed to the dextrins and gums in the honeydew.—H. F. Wilson, Madison, Wis.

LOUISIANA.—Louisiana has experienced a very peculiar spring. Since it was ushered in, we have had freezes, rain and hail (mostly rain) which confined the bees to the hive a greater part of the time. Long before winter was over, we had unseasonably warm weather, which brought out the flowers, and brood raising commenced in earnest.

Many colonies had filled ten or more frames before March 1. Then came a freeze, causing a great loss of brood. This was followed by warm weather and more brood. Then rain came almost every day, causing a congestion in the hives. This brought on swarming all over the state, causing much trouble to the big beekeepers and a loss of honey.

The Honey Crop to Date is Below Average, Prospects Are Good for Later Honey Flow.

The honey crop so far has been below the average. Where bees were well cared for and in a good locality, fifty to seventy-five pounds of honey per hive has been the average. In other districts there has been practically no surplus gathered. Today, April 30, is very warm, reminding one of mid-June weather. If fair weather continues with us, it will be but a short time until many mid-summer honey plants will be blooming, and, with the large colonies of bees ready to work, there will yet be an average crop.

Syrup and molasses made from sugar cane is the beekeeper's greatest competitor here in Louisiana. Every farmer has a half acre or more to grind during the fall season, then he floods the market with ten-pound pails of this product. Syrup has always been cheaper than honey and satisfies the consumer when he craves sweets. Honey, however, came into its own recently when bids were asked on a quantity of syrup. This bid was made by one

of our largest state institutions. One of our hustling beekeepers who owned a number of barrels of honey, seeing the advertisement, sent in a bid on honey. The price he gave was so attractive to the purchasing agent that he at once ordered twenty-five barrels from this beekeeper.

More five-pound packages of bees than usual were shipped to the apple orchards of the North and East for pollination purposes, and the demand for package bees and queens has been beyond expectations. —E. C. Davis, Baton Rouge, La.

NORTH DAKOTA.—Judging by reports received from various parts of the state, the winter loss of colonies was rather heavy. Both outdoor and cellar wintered bees fared alike in this respect. The heavier-than-usual loss was probably due to the early shutting off of the honey flow last fall. Ordinarily the honey flow in this region continues until September 1 or later, but last year it was practically over early in August, with the result that many colonies were not well stocked with winter stores. Brood rearing also tapered off rather early and colonies were none too well supplied with young bees.

Heavy Winter Losses Quickly Made Up by Means of Package Bees.

These losses are being quickly replaced with package bees. Packages began to arrive in Fargo early in April this year. In general, they arrived in almost perfect condition and the weather was fairly favorable for introducing them to their hives. So far as can be ascertained, there has been no supersedure of queens in these early package colonies and they are building up satisfactorily.

Here at Fargo last year there was a marked difference in the honey production of overwintered colonies as compared with package colonies secured in the spring. This fact was called to my attention by a number of beekeepers who had the opportunity of making comparisons. Probably the difference in production was due to the type of honey flow. It began a week or ten days earlier than usual and was curtailed early in August on account of drouth. It is possible that the package colonies did not have sufficient time to build up to take advantage of the honey flow while it lasted, whereas the overwintered colonies were ready as soon as the flow began.

This year at least two North Dakota beekeepers have driven to the South for their package bees and have hauled them by truck to North Dakota. One returned this week from a point in Texas with a load of more than 200 packages, each of which averaged more than three pounds of bees. The packages came through in excellent condition. The journey of approximately 1800 miles was made in less than three days, although it required almost continuous driving by the beekeeper and his two helpers who accompanied him.—J. A. Munro, Fargo, N. D.

GEORGIA.—Swarming throughout the state has been the worst ever known. Beekeepers are having great difficulty in holding the bees together sufficiently to make even a normal crop of honey.

The greatest factor in causing this has been continued cool nights, early mornings, and late afternoons, the thermometer registering 60 to 65 degrees. This has also had its effect on comb building and evaporating and capping honey. The ready-built comb has all along been filled with nectar. The season has been long drawn out, with but very little honey ready for market up to this date (May 2). Swarming has continued for more than thirty days.

A Great Variety of Honey Plants in Various Portions of the State Have Given Good Honey Flows.

Spring titi and huckleberry were almost a total failure throughout the state as far as surplus honey is concerned. Black tupelo that grows along the larger streams throughout the Piedmont Plateau gave a good honey flow during the first part of March. Black-gum that grows in the same territory, including all the Coastal Plain region, gave a good honey flow during the middle of April. Tulip-poplar, which grows extensively from the upper Coastal Plain region throughout the state and on in the Blue Ridge Mountains, is giving a good yield at the present time. White tupelo in the lower Coastal Plain region is giving a great yield, and it looks as if there will be a normal crop made from this source. Gallberry, which will be out in full bloom by May 15, gives a promise of a great yield. This plant

grows extensively in the Coastal Plains, covering all flat woods, bayheads, and low ridges.

The greatly-discouraged beekeepers are now optimistic over the outlook, believing that the time is near at hand when they will again get back to normal production.—J. J. Wilder, Waycross, Ga.

MICHIGAN.—The spring is very late. Many years fruit bloom would be at its height at this date and colonies would be at swarming strength. It will be several days yet before fruit trees are in bloom, and while colonies are strong, the cool, wet weather has delayed swarming cells. Clovers look mighty fine. This may be a white clover year. There is more of it showing up in the pastures than I have seen for several years. Other plants are looking prosperous, too, both in this area and in northern Michigan.

A group of representative members of the Michigan Beekeepers' Association called on the Ways and Means Committee of the House recently asking for funds to continue apiary inspection on a sound program. The committee listened carefully and indicated that inspection would not be allowed to suffer. The final outcome is yet in the hands of the legislature and the governor.

Plans are already being made for a big summer meeting, August 3-4, at the fine new honeyhouse belonging to our president, O. H. Schmidt, Bay City. Our summer meetings have always been strong drawing cards, and the inquiries coming in at this early date prove that beekeepers are anxious to see this complete modern equipment for handling big crops.

The more rainy days during blossom time, the more the fruit grower needs lots of bees in the orchard. The number of inquiries that are coming in just now show clearly that pollination is now being recognized as one of the major problems in fruit production. And the way the members of our legislature have been supporting our apiary inspection program recently has been due almost entirely to the fact that several members are from the fruit districts and have had either personal experience with pollination or have seen the good work of bees in the orchards.

A dairyman friend of mine bought a gallon of honey last September, saying that he figured that would last him all winter. He got interested in honey on cereals, formed the habit, and bought 60 pounds in November, another 60 pounds in February, and has just bought another 60 pounds. He is the only member of the family who eats much honey. Another friend took a 10-pound pail to hunting camp last fall under protest that 5 pounds would be enough. He says the whole pail disappeared one breakfast. Nine of us ate 60 pounds in our camp last fall.

While the honey story is going over better than it ever has before, many of us strain at gnats to swallow a mountain. Instead of trying to sell 100,000 pounds on the first order, let's sell to a few of our immediate friends first. Results prove the worth of the effort.—R. H. Kelty, East Lansing, Mich.

WESTERN NEW YORK.—Although clover was badly heaved during the winter, spring rains have worked wonders and there seems to be a good showing of good healthy clover plants at the present time.

While we have done but little actual work among the bees and they are still in the winter packing cases, they seem to have wintered much better than we had anticipated at the time of packing last fall. We have had to add a few supers where bees were clustering on the outside of cases, and they seem to be above average strength at this time.

Many Colonies That Were Not Properly Supplied With Stores Last Fall Have Starved or Are in Poor Condition.

Some of our friends and neighbors have reported many colonies out of stores and some starved. One neighbor reported that not over 10 per cent of his bees had sufficient stores. These were mostly situated in the north part of Niagara County where last fall's honey flow was poor.

Interest in beekeeping seems to be good in spite of the low prices on honey for the past few months. Clover honey is pretty well cleaned off the market. Prospects for fruit are exceedingly good at this writing (May 7) and we expect to do an average business in furnishing bees for pollination. However, many growers are having difficulty in financing their operations. Apples have not worked out as well this season as they did the previous two seasons. Good fruit is not worth as much today as it was at picking time last fall. —H. M. Myers, Ransomville, N. Y.

ONTARIO.—We are having a late spring with much cool and cloudy weather. There have been only a few days that bees have done anything to date (May 10), and this has aggravated a situation that was bad to start with at the close of winter. I have done a lot of thinking trying to discover the cause of such heavy use of stores by the bees around here during the past winter, and confess that I am not sure as to the cause yet. One thing I am sure of, is that we never had our bees heavier than they were last fall, and another thing that I am sure of is that we never had them so short of stores as they are this spring. It has been a continual worry ever since April 1, and there is no question but that bees have suffered from shortage of stores even if they have not actually starved since we found out how short they were. The winter was mild but so was the preceding winter when we had perfect wintering.

I feel that, in most cases, the cause can be attributed to some poor stores gathered last summer when clover failed locally. The bees then carried in some stuff from spruce and other sources that must have caused the damage. This seems to be proved by the fact that some fifty eight-frame Langstroth hives that were fed heavily last fall, wintered perfectly and have required less feeding than the rest of the bees that were in larger hives. Stores not of the best caused the bees to get uneasy early in January and they started heavy brood-rearing with consequent heavy use of stores. The colonies in the eight-frame Langstroth hives were about solid with stores at that time and there was no place for brood-rearing to be carried on. That is my conclusion. If others have a better solution, I would be glad to hear it. The worst part of the matter is that the damage has been done and no solution will amend things for this year.

Since last writing I have been trying to find out just when that stabilization of the pound sterling at $4.60 for purposes of settlement for honey and other products sent to Great Britain would become effective. I am sorry to say that I have had a definite ruling that it will apply only to shipments sent overseas after the date of passage of the bill in Parliament. Of course, that cuts out all honey sent last year and will apply only to any sent this season if any is shipped. However, the pound was at $4.10 a month ago and is now around $4.50. If it stays at that figure, the stabilization would not make such a great difference after all.

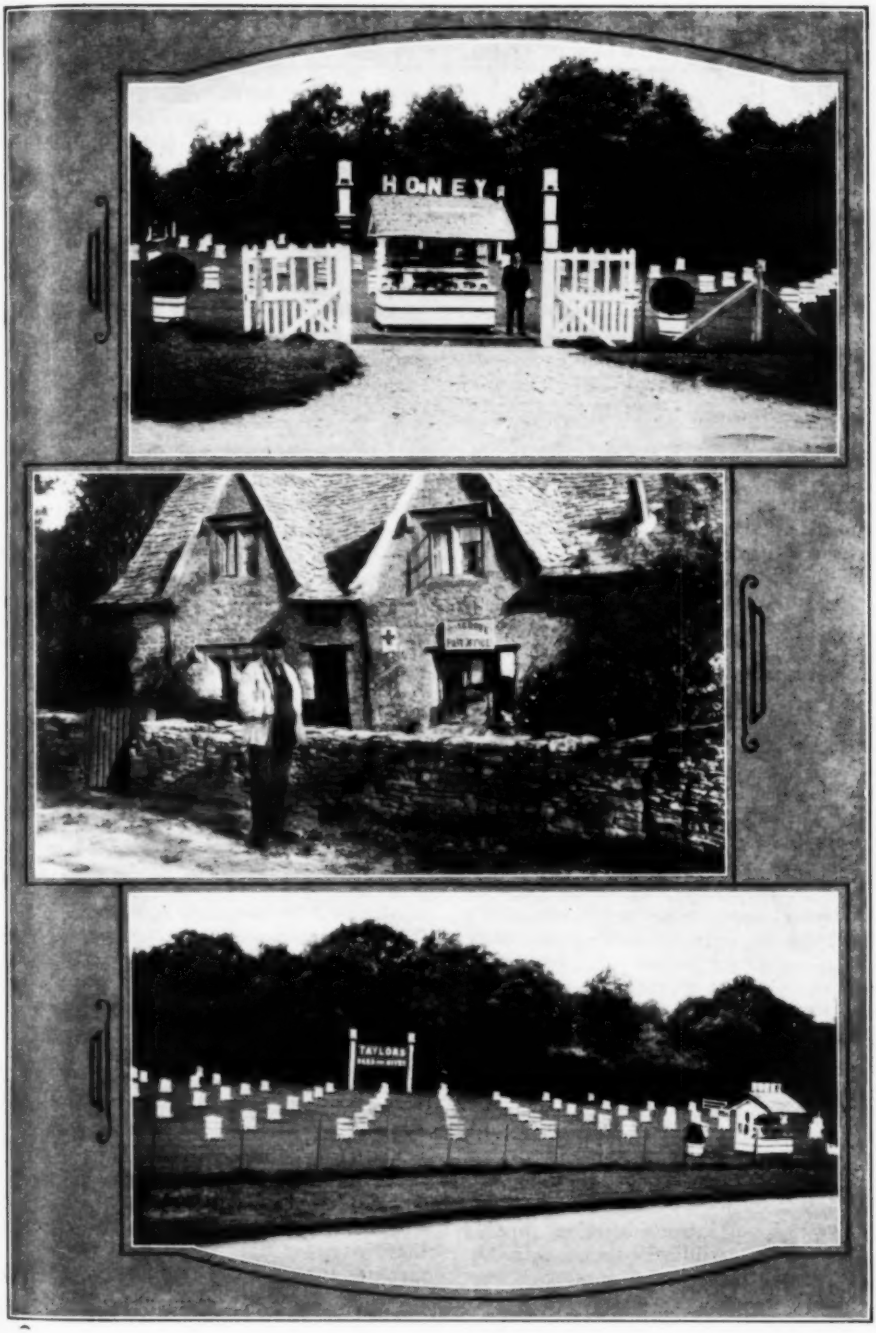
Just a word to express my appreciation of that write-up descriptive of the trip by Mr. Root and his wife down in Mississippi. At different times I have expressed my own appreciation of the splendid treatment I have always received when dealing with some of the southern beekeepers who are in the queen and package business. I feel sure that none of these men will feel that I am partial when I say that Mr. D. D. Stover is just a little bit nearer to me than the rest, when I explain that he is the only one that we have had in our home and the only one whom I have met at different times on other occasions.

About the highest compliment that can be paid any man in a business way is to say that his word is as good as his bond, and I can truthfully say that in regard to Mr. Stover. Lest it be construed that this is prompted by selfish motives, let me say that there have been years that we have bought no bees from Mr. Stover or had any business with him whatever. But that makes no difference in our social relations, as he is too big a man to know what business jealousy is.

Of course, bees being so short of stores discounts prospects for a honey crop to a great degree. However, the bulk of our colonies will be in fair shape if weather becomes favorable right away, and willows, dandelion, and fruit bloom should give an old-time honey yield. Note what I am assuming when making that statement. During the past four years at least, we have had little from early spring plants.

The latter half of April, while cool and wet, was, after all, favorable for clover as we had but little freezing and thawing while frost was coming out of the ground. The result was that any fields of clover not too badly damaged earlier in the winter, made an amazing comeback. What little clover we have locally is in good condition at this time.

Well, I must stop this chatter and hie away to look over another apiary and dole out some feed to keep them going until old Sol gets friendly again and consents to show his face and thus allow the bees to get a bit of nectar from the large willows just opening and from the dandelions that are also just starting to show their yellow heads.—J. L. Byer, Markham, Ontario.



BEEKEEPING IN ENGLAND

Upper—One of a series of roadside honey stands tastily arranged, to attract attention of passing motorists. Middle—This English beekeeper evidently is also village postmaster. Lower—Neatness and harmony in arrangement of the apiary and honey stand make this an attractive spot.

Food Department

Malitta D. Fischer

Honey and the Press

It has been said that the American newspaper is the leader of public opinion. In spite of economic conditions, leaders in the press world maintain that the newspaper is not only the leader but also the stabilizer of public opinion. The present day newspaper tries to meet every demand. The current news, the study section, the sports section, the comics, the children's hour, the health problem, the style secrets, philosophical questions, and last but not least, the home page material, all combine to give the reader what he wishes.

The spirit of co-operation on the part of newspapers has never been more evident than now. They want to give you what you want. You'll find them very receptive to all types of column copy. They are particularly anxious to have news notes or items that have general readers' interest. And what has more human interest than the story of the bee hive? It is full of romance and of sound philosophy. Folks will never cease to marvel at the wonders of the honeybee. If your newspaper includes articles on the wonders of the honeybee, you can gradually build up a greater interest in honey. The home paper editor will frequently feature honey recipes at the same time the rural editor is running a story on bees.

That the press is anxious to co-operate with the beekeeper and tell the world about bees and honey is pretty conclusively proven in the report of press activity during November, 1932. National Honey Week was held during that month. Through the courtesy of a few of the Institute's supporting members, a clipping service was available for that month. Mr. D. D. Stover organized the support from these members. It was estimated by the president and other officers of the Institute that surely not more than 500 clippings on honey would be found during the month of November, and that if these members could contribute a sum total amount of $25.00 for such a service, that would be sufficient. If the press would run stories to give us 500 clippings on honey during the month of November, we felt that would be wonderful co-operation.

Well, we were happily surprised, and I believe you will be equally as surprised when I tell you that over 900 clippings on honey came to the office of American Honey Institute from the clipping service for just the month of November. And, of course, the clipping service bill was almost $50.00.

So that you may see how the clippings were distributed among the states, the report follows: Alabama, 12; Arizona, 8; Arkansas, 9; California, 45; Colorado, 26; Delaware, 3; Florida, 7; Georgia, 2; Idaho, 2; Illinois, 31; Indiana, 59; Iowa, 75; Kansas, 46; Kentucky, 26; Louisiana, 21; Maine, 6; Massachusetts, 14; Maryland, 16; Michigan, 22; Minnesota, 50; Mississippi, 2; Missouri, 55; Montana, 3; Nebraska, 67; Nevada, 1; New Mexico, 8; New Jersey, 19; New Hampshire, 6; New York, 66; North Carolina, 1; North Dakota, 26; Ohio, 32; Oregon, 9; Oklahoma, 25; Pennsylvania, 54; South Dakota, 12; Texas, 42; Tennessee, 17; Rhode Island, 1; Utah, 1; Washington, 30; West Virginia, 7; Wisconsin, 37; Wyoming, 7; Vermont, 6; Virginia, 13; Washington, D. C., 1; Hawaii, 1; British Columbia, 1; Ontario (Canada), 1; Manitoba, 1. Grand total, 934. The clippings came from more than 900 newspapers in 46 states.

Of course, a concentrated effort was made during National Honey Week, yet on analyzing these hundreds of clippings, one finds little indication of beekeepers going to very much trouble to get press co-operation. The press possibilities are unlimited and if you can (you can if you will) take time to sell local newspaper workers on the value of your honey story, you will do much to create favorable public sentiment toward honey. Once that sentiment is created, the consumption will double, triple, and even double triple.

Press co-operation can be secured at any time, but if it is your first attempt in this direction, you should tie it up with National Honey Week activity. Your first approach is always a little difficult, and with the National Honey Week program already an annual feature, you should be

able to get more rapid response and better co-operation. Try it! National Honey Week this year comes November 13 to 18. Start now on your city editor, your society editor, your home page editor, and the children's editor. There are honey stories that fit the columns run by these special writers. Above all, see that honey recipes and food value copy on honey are run in the columns of the home page.

But coming back to an analysis of these clippings, it has been found that the majority were the result of work by nutritional specialist and home demonstration agents who became interested in honey through just such contact work. For instance, in the case of one state, a nutritional specialist was responsible for honey articles in 28 newspapers in that state. She prepared two articles on honey, and through her contacts distributed them to 28 newspapers which used her copy. Fourteen more of the clippings from that state were from one release of a home economics project leader, thus making 42. Five beekeepers' wives were responsible for seven more of the clippings, bringing the number to 49. The total of that state was over fifty. The analysis of this one state along with other states clearly indicated that the press co-operation on honey during National Honey Week came from nutritional specialists, home economics project leaders, and a few beekeepers' wives. *Where were the beekeepers during this program?*

In some states, a few beekeepers grasped the idea of working with their press, and they did a nice piece of work. They did not wait until November to start the program, but laid their foundation early in the summer. When they had a summer picnic of beekeepers or a dinner at their home, or in some way featured bees and products made from honey, they extended an invitation to some press agent. He or she was a guest at the party. When they were extracting honey, they made it a point to get the press representative out to see just how honey was extracted. Those same beekeepers made an effort to see that press representatives were at their fall and winter meetings and kept them fully informed of National Honey Week developments.

I know of another case where the editor of a home page section for a newspaper that has about 200,000 circulation is always invited to every beekeepers' banquet, every beekeeper's summer field meet, and frequently to luncheon or dinner by the beekeeper interested in getting educational releases on honey in that paper. That beekeeper makes it a point to get honey from different sections so that when one comes in from one section, he takes a small sample to the home page editor with a note like this on the jar: "Here's some honey from Florida tupelo trees. I thought you'd like to sample it to see how it differs from what we get in this section." He never takes her time; just leaves the sample on her desk for she may be out to some woman's meeting getting news for her page. But the honey copy that gets into that home page is really almost unbelievable.

Are you taking advantage of the mimeographed and printed releases American Honey Institute makes? They should be in the file of every home-page editor. She will be glad to start a honey file if she does not have one. A newspaper home page file is not up-to-date these days unless it does contain honey recipes. There are magazines, house organs, institutional trade journals, and many other types of publications using honey copy, too. American Honey Institute contacts as many of them as possible. It wishes it could contact many more, for the results so far secured from publications thus contacted have been amazing. Take the Woman's Home Companion for instance. American Honey Institute has been furnishing one of its food and equipment editors honey-recipe suggestions over a period of several years. Now that editor is really honey conscious, and for three straight issues of that paper, she had a honey recipe and a very enthusiastic personal comment on how good the dish was.

But how is the Institute to know who your home page editor is? National listings give just the name of the paper, and where a beekeeper does not make the effort to get the name of the woman doing this work for his local paper, it is impossible for the Institute to put "personal touch" into the contact. Why not start now to find out all about the workers on your local newspapers and get the name of at least the home page editor to the Institute so that a full set of recipes may be sent to her? Give her a small amount of honey so that she may try a few honey combinations and become enthusiastic over the possibilities of its use. She'll then be able to radiate more enthusiasm in her columns about honey.

Talks to Beginners

Geo. S. Demuth

June is usually a busy and happy month for both the bees and beekeeper. Throughout the greater portion of the country, the main honey flow should begin some time during the month. The exceptions are in the South where the early honey flow may now be over and beekeepers may be harvesting the early crop of honey. In many southern localities, the early honey flow is followed by a later one after an interval of scarcity of nectar. In the southern portion of the white clover and alsike clover region, the honey flow usually begins about the first of June, while in the northern portion of this region it does not begin until 10 days or two weeks later. Sweet clover comes into bloom later than white clover and alsike clover. In the great sweet clover belt of the Plains area it may come into bloom early this month in the southern portion, but in the northern portion the main honey flow from this source usually begins after the middle of June. In some localities, there is only a meager honey flow this month, such as in the buckwheat region of Pennsylvania and New York, and in the goldenrod and fall-flower region in the northern portion of the Atlantic Coast region. In these localities the main honey flow comes in August and September.

Management During Honey Flow

During the main honey flow, the outstanding features in management are (1) swarm control, and (2) giving additional supers as needed. In other words, the problem is to keep the working force of each colony together and keep the workers busy by inducing them to begin new work in additional supers as fast as more room for the storage of honey is needed.

Those who did not clip the wings of the queens during fruit bloom, as advised in these Talks last month, should by all means do so now, since this greatly simplifies the hiving of swarms and often prevents loss of swarms by absconding. While it is a little more difficult to find the queen now than during fruit bloom, by waiting until the bees begin to work well in the fields, the queens can usually be found without much trouble.

The first super should be given at the beginning of, or just a little before, the beginning of the main honey flow. In the white clover and alsike clover region, the honey flow usually begins about 10 days after the first white-clover blossoms begin to appear. By noting the way the bees work and by opening the hive to see if new honey is being stored faster than it is consumed, it is possible to tell when the honey flow begins. Usually the bees begin to secrete wax as soon as nectar is available in considerable quantity and some of this new white wax will be seen in the upper portion of the brood combs as the bees begin to elongate the cells to receive the honey. By giving the first super a little before the main honey flow begins, swarming is discouraged.

Swarms That Issue During Owner's Absence

Beginners are often puzzled to know what may happen if a swarm issues when there is no one at hand to take care of it. If the queen is able to fly, such swarms usually abscond, and with the swarm usually goes all prospects of surplus honey from that colony during the season. If the queen's wings were clipped, the swarm will invariably return to its hive, sometimes even before clustering, unless by chance it should unite with another swarm having a queen that can fly. When a swarm issues and returns to its hive because the queen's wings were clipped, the queen is often lost, failing to find her way back into the hive. If she is not lost, the colony usually attempts to swarm again within a day or two. If she is lost, the bees simply wait until the first of the young queens emerges, usually seven or eight days after the prime swarm issued, then a swarm goes out accompanied by one of the young queens. To prevent this, all but one of the queen-cells should be destroyed before any of the young queens can emerge, that is, within five or six days after the first swarm issued.

How to Anticipate Swarming

By carefully examining the brood combs about once a week during the swarming season, beekeepers can tell in advance whether or not swarms may be expected. Beginners should examine their colonies at frequent intervals during the honey flow in order to become familiar with the manner in which bees prepare to swarm. The queen-cells built in preparation for

swarming can readily be found when they are first started, thus giving a week's notice in advance of the intentions of the colony in regard to swarming. Enthusiastic beginners are sometimes able to coax their colonies through the main honey flow without swarming by going over the brood combs carefully every four or five days and destroying every queen-cell that may be present, and at the same time, giving an additional super if needed. While destroying recently started queen-cells can not be depended upon to prevent swarming, it does in some cases, especially if the queen-cells contain only eggs or very small larvae. But if the queen cells are several days old, destroying them would have no effect in preventing swarming.

How to Make an Artificial Swarm

Many amateur beekeepers practice what is called "artificial swarming," when they find queen-cells in preparation for swarming. This is done simply by finding the queen, placing her in a cage, or setting the comb on which she is found into an empty hive, then shaking most of the bees from all but two or three combs, shaking them back into their own hive, and giving frames of foundation to take the place of the combs that were removed. The queen is then put into the hive among the shaken bees, an excluder put in place, and the partly-filled supers put in place over the excluders. Thus an artificial swarm is made. The combs of brood together with the bees adhering to the two or three combs that were not shaken are assembled in a new hive. If queen cells are well advanced, the comb containing the finest-appearing one should not be shaken, since to do so might injure the immature queen within the cell. All other queen-cells should be destroyed. The new hive, now the parent colony, should be placed close beside the old stand and later moved away in exactly the same manner as when hiving natural swarms, as described in these Talks last month.

Killing Queens to Prevent Swarming

Making an artificial swarm, as described above, usually works well for a short honey flow, but if the honey flow is long, as from sweet clover, it is better to make what might be called an artificial parent colony. When a colony is found building queen-cells in preparation for swarming, find the queen, kill her unless she is of especial value, and destroy every queen-cell. In order to find every cell it is necessary to shake most of the bees from each comb and examine the comb carefully. Ten days later again destroy all queen-cells and introduce a young laying queen, following the directions on the mailing cage in which the queen was shipped. Great care must be taken when queen-cells are killed the second time because the bees then often build queen-cells over older larvae which are much smaller than normal queen-cells. Such queen-cells would result in inferior queens.

Giving Additional Supers as Needed

Some seasons one super is enough to hold all of the surplus honey the colony is able to store, while other seasons a half dozen supers may not be enough. During the main honey flow, the work in the supers should be watched closely. Beginners often lose the greater portion of their possible surplus honey crop by failing to give additional room as needed during a good season. During a slow honey flow the bees usually begin storing honey in the middle of the super, gradually extending the work toward the sides. During a rapid honey flow, they may begin work in the entire super. If empty extracting combs are given in the first super, beginners are often surprised to find thin nectar in nearly every cell in every comb sometimes within a day or two. This thin nectar, of course, must be ripened and concentrated in less space before it is ready to be sealed. When the bees begin storing honey in the outside combs of an extracting super, or when they draw out the foundation in the outside sections of a comb-honey super, the colony is ready for a second super, provided, of course, the flowers are yielding well. When work has progressed to a similar degree in the second super, a third should be given.

If comb honey is being produced and the honey flow is rapid, the second super should be placed between the first super and the brood-chamber, but if the honey flow is slow, the second super should be placed above the first in order that the first super shall be better and more quickly finished. This tiering up should continue until there are indications that the honey flow is coming to a close, even though the supers may be tiered up four, five, or six high. In comb-honey production, some beekeepers keep the first super just above the last super that was added with all others tiered up above it, that

(Continued on page 372.)

Gleaned by Asking

Geo. S. Demuth

Feeding Wax to Bees

Question.—Can honeybees use beeswax if fed to them? If so, do they build comb with it to better advantage than if secreting new wax?—Arthur L. Axtell, New Jersey.

Answer.—Under some conditions bees will take thin shavings of wax for building comb. However, it has never been considered profitable to feed beeswax to bees for this purpose. When nectar is plentiful, they apparently prefer to secrete new wax for any necessary comb building. Early experimenters who fed beeswax to assist the bees in building comb, gave up the idea as impracticable, deciding that it was much more profitable to use comb foundation instead.

Caging Queens to Prevent Swarming

Question.—Instead of removing the queen, destroying all queen cells, then introducing a laying queen after an interval of ten days after again destroying all queen cells, why not simply cage the old queen within the hive during that interval, then, after destroying all queen cells, release her among the bees? For this purpose, what kind of cage should be used for caging queens?—Pailoor Narayana, India.

Answer.—If the queen is not over a year or a year and a half old and the season is such that the bees can readily be induced to give up swarming, caging the old queen within the hive or keeping her in a nucleus during the ten-day interval, then returning her to the bees, usually results in no further attempt to swarm. But if the queen is old or conditions are such that the desire to swarm is intense, it is much better to replace the old queen with a young one that has just recently begun to lay. Otherwise, there would be further preparation to swarm if the honey flow continues. An ordinary introducing cage is suitable for caging the queen during the ten-day interval. It is not necessary to supply the cage with candy since the bees will feed the queen through the wire screen. For this purpose, some have used a cage made of excluder zinc, thus giving the bees access to the queen through the perforated metal. It is not advisable to save the queens whose colonies prepare to swarm without a good reason for doing so. Young queens are so easily reared that it is much better to rear them from the best stock to replace all old queens whose colonies prepare to swarm, especially if they do so in spite of good management.

Disinfecting Used Equipment

Question.—I have purchased some bee supplies among which are brood-frames of good quality but somewhat soiled from having been used. Would you advise disinfecting them? If so, how and with what?—LeRoy Trostle, Pennsylvania.

Answer.—If you are sure there was no American foulbrood in these hives it is not necessary to disinfect the frames. If foulbrood was present, they should be disinfected before using again. This can be done by boiling them for about 30 minutes making sure that they are submerged in boiling water or entirely surrounded with live steam. Frames can be cleaned nicely in this way by boiling them in a lye solution made by placing a can of concentrated lye in a washboilerful of water. After boiling, the frames should be piled in a straight pile and a weight put on top to hold them true while drying. Otherwise, the wood is liable to warp and twist.

Bees Troublesome at Neighbor's Pump

Question.—On hot days bees go to a neighbor's pump for water, and this neighbor has told me that I must move my bees. I have nowhere to take them. Does the law require that I move them?—Joshua Showalter, Illinois.

Answer.—Beekeeping is a legitimate occupation and has been so recognized by the courts. You have a right to keep the bees on your premises so long as they are not a nuisance to your neighbors. It is doubtful if the bees that are drinking water at a neighbor's well could be considered a nuisance even if the neighbor could prove that the bees are yours, which would be difficult. However, it would be much better to adjust the matter with your neighbor in a peaceable way, if at all possible. We suggest that you supply water in your apiary by arranging some kind of a watering trough provided with floats so that the bees will not drown. A good material for floats is cork chips, such as are used in shipping grapes. A little salt added to the water will make it more attractive for the bees. The watering place should be established in the apiary early in the spring before the water carriers have formed the habit of going elsewhere.

Simple Method of Requeening

Question.—I usually place the queen below an excluder about May 25. I would like to remove the lower chamber which contains the old queen about ten days later, leaving the chamber with the queen cells, then place the excluder and the supers above it. Would this result in the cells being destroyed?—Harry C. Leavitt, Maine.

Answer.—No. The colony would then be queenless, and the bees would be anxious to keep the queen cells. However, it would be necessary to destroy all but

one of the queen cells before the young queens begin to emerge. Otherwise, the colony would swarm soon after the first of the young queens emerges. Sometimes such colonies having a number of queen cells swarm until there are but few bees left, sending out five or six swarms, each smaller than the preceding one.

Forced Supersedure

Question.—Referring to the article by C. A. Wood, beginning on page 15 of the January, 1932, issue of Gleanings in Bee Culture, could I accomplish the same results by placing the queen and all the brood in the top story over an excluder and two or three supers, and filling the lower story with frames of foundation together with one comb containing eggs from the queen from which I wish to breed? Would the bees go ahead and build queen cells and thus supersede their mother in the top story? If this will work, I can destroy the old queen when the new one begins to lay.—Chas. W. Coburn, Washington.

Answer.—Your plan involves the same principle as the plan outlined by Mr. Wood to which you refer. In some cases the bees would not start queen cells on the comb placed in the lower chamber, but this objection could easily be overcome by setting the chamber containing the queen on a separate bottom-board for a few hours or over night, thus making the colony on the old stand queenless. Before doing this, the bees from several combs from the other chamber should be shaken into or at the entrance of the lower chamber, being careful to leave the queen in the other chamber. Since this operation is carried out during the building-up period prior to the main honey flow, it would be better to put most of the brood into the lower chamber in order to give the queen in the upper chamber plenty of room to lay eggs to produce workers for the honey flow. With your plan, the old queen would probably become crowded in the top chamber, thus restricting brood rearing at the time the harvest hands should be reared.

Releasing Queens When Installing Package Bees

Question.—What has been your experience in immediately releasing the queen when installing package bees, provided she has traveled among the bees in a queen cage? I know of one case in which 25 queens were so released with better success than I have ever had with package queens.—Leon F. Packer, New York.

Answer.—The usual procedure is to thrust a match stem through the candy in the end of the queen cage so that the bees will release the queen promptly. Since she is practically introduced during the journey, she should be released soon after the package is installed. It would not be advisable to open the cage to release the queen at the time of installing the bees on account of the general excitement on the part of both queen and bees at that time. By the above-described method, the queen is promptly released but not until after the bees have quieted down.

Hiving Swarms Back Into Same Hives

Question.—One of my colonies swarmed out twice, but I put the queen back into the hive and put on another super. Instead of filling the new super, the bees stored honey in the brood-chamber, thus blocking the queen. How can I prevent this?—J. E. Jordan, Virginia.

Answer.—Putting the swarm back into the hive from which it came does not prevent further swarming. In most cases the bees will swarm again in a day or two, and, if put back two or more times, the bees usually kill the old queen and wait until one of the young queens emerges when further swarming will take place. Sometimes several swarms issue before the colony settles down to normal conditions. A swarm can be put back and made to stay by killing the queen, destroying all queen cells, then ten days after the swarm first issued again destroying all queen cells and introducing a young laying queen. When colonies are treated in this way, they seldom attempt to swarm again during the season. When the young queen begins to lay, the bees usually carry the recently stored honey from the brood combs into the supers to make room for brood.

Making Increase by Division

Question.—Is it possible to split a colony of bees to make two colonies by purchasing a queen for the queenless portion? If so, how can it be done?—Elizabeth Arthur, Ohio.

Answer.—Yes. Colonies can be divided into two or more parts and the queenless portion or portions given a queen as you suggest. This can be done simply by taking combs of brood and adhering bees from the old hive and placing them into a new one. The entrance of the new hive should be closed with green grass to confine the bees until the next day. When this is done, fewer of the bees from the new hive will go back to the old. A queen can then be introduced to the queenless division. Colonies should not be divided just before or during the main honey flow, since in most cases this would result in no surplus honey being stored. If one cares to sacrifice the prospects of a honey crop, colonies can be divided as soon as they become strong enough in the spring, thus making four or five colonies from one. However, if there is prospect of a good honey flow, it would be better to secure a crop of honey this season and make the desired increase next spring by purchasing package bees.

Clouds and Sunshine

(Continued)

It would be difficult, if not impossible, to record the train of thoughts that coursed through Anthony's brain while Mr. Peterson was delivering his oration. Anthony was in a rather embarrassing situation. He wanted to finish the transaction and be on his way before the grocer discovered who he was.

After some dickering, the trade was made. Anthony picked up his pile of groceries, and, as he was about to leave, Mr. Peterson said, "Now, may I ask your name, please?"

Anthony hesitated a bit, and finally said, "Why—er, well, my name is Darke."

"Do you happen to know Anthony Darke, and are you related to him?"

"Well, yes, in a way. I have known him for a long time. I might say that I've known him all my life."

"Well, Mr. Darke, I hope you will pardon me for saying what I did a few minutes ago about Anthony Darke. You will understand that I wasn't really findin' fault with him. Really, Anthony is a good-hearted old fellow, and I sorta like him."

By this time Anthony had started out through the door to his wagon by the sidewalk. Mr. Peterson followed him to the door. When he got one look at old Buckskin and the old wagon as Anthony climbed into it with his groceries, Mr. Peterson stood in the doorway somewhat petrified and dazed. In fact, he never moved out of his tracks until the familiar figure of Buckskin hauling the old wagon had disappeared around the corner.

It is needless to say that Anthony was glad to be on his way home. How would he ever have the nerve to visit Mr. Peterson's store again. Yet, he really had nothing to fear because he knew the grocer would finally know the truth.

Anthony wanted to see Mr. Bright a few minutes, so he drove up by his place on his way home. He left Buckskin at the gate by the road and went back to Bright's workshop where he found his friend busy as usual.

He had to look twice before he recognized Anthony in his brand new overalls and shirt, also with a clean shave and the latest style haircut. Bright seemed unable at first to find words to express his complete surprise. Finally he said, "Well, I declare, if it isn't Anthony Darke! Why, Anthony, where did you get all the new togs? The depression must be over. You must be going to get married."

Ordinarily, Anthony objected to being twitted about his appearance, and especially anything pertaining to matrimony. But he had come to know that Mr. Bright was his real friend, so apparently he did not object to Bright's remarks. He then proceeded to relate to Bright his experiences with the barber and the grocer. He then admitted that what Bright had told him about getting cleaned up had meant the securing of food and an escape from actual starvation.

Anthony also said that he might be getting married some time. In a confidential tone he admitted that he once had a girl who was nice to him for awhile, then suddenly started to like another fellow and married him. This experience had apparently soured Anthony on women. However, he admitted that if he could find a nice agreeable, good-looking young woman who was a good cook and not a spendthrift, he would ask her to marry him. Bright felt inclined to suggest a matrimonial bureau, but on second thought he decided not to do so, and made no further comment.

Anthony seemed sure that he could dispose of the remainder of his honey without any trouble and wanted to increase the size of his apiary for the season just ahead. He wanted to buy some package bees but had no money to pay for them. It occurred to him that he could divide the colonies and thus increase the size of his apiary, and possibly double his honey crop. The plan seemed feasible. He already had hives and extra frames.

When this plan was presented to Mr. Bright he rather discouraged it. He tried to tell Anthony that it would be much better to give his wintered-over colonies the proper care in order to make them very populous colonies ready for the honey flow. Mr. Bright feared that there would not be sufficient time, before the beginning of the main honey flow, to divide his colonies and have all of the divisions up to normal strength at the proper time. Anthony seemed sure that he could carry out his plan successfully. Bright saw it was useless to attempt to argue

(Continued on page 383.)

Bees, Men and Things

(You may find it here)

"Bees are in good condition here. I have over 100 colonies. We are hoping for a good crop of honey."—Wm. Nelson, Stokes County, North Carolina.

"The outlook for a honey crop here is not good. Red clover was badly killed and so was white clover. The bees came through the winter in good condition."—J. Burnham, McDonough County, Illinois.

"The outlook for a fair honey crop is pretty bright. My bees came through the winter in good condition with plenty of stores left, so they built up rapidly."—Clarence Tontz, Logan County, Oklahoma.

"I am pleased with myself. I have just made my first contribution to the American Honey Institute. It was necessarily small, but I feel much better. Those that I know who have formerly contributed continue to think highly of the Institute's work, and are doing their bit."—J. F. Norgren, Lake County, South Dakota.

"Fifteen years ago I bought my first bees. I have increased slowly and now have 69 colonies with a total equipment worth $1500.00 all paid for by the bees. I have never missed a copy of Gleanings in Bee Culture since that time, and never expect to. I read every page."—Wallace C. Greenleaf, Ionia County, Michigan.

"The season of 1932 gave large yields of honey and many colonies stored 100 pounds or more of surplus. The Danish Beekeeping Association has set the price of extracted honey at 20 cents a pound, but I believe that large quantities have been sold far below that price."—Louis Jensen, Denmark.

"Bees and honey plants are in bad condition. The bees are without stores, and beekeepers will have to feed to keep them alive. It has been very dry and there has been nothing for the bees to get. There has not been a swarm in this country this year."—J. N. Mayes, Frio County, Texas.

"Referring to the caption, 'The Most Extensive Bee Woman in the United States,' in a recent article in Gleanings in Bee Culture, Mrs. Loveitt of Phoenix, Arizona, owned and operated a thousand colonies for several years. I do not know the exact number she now operates. There is no reason why women can not own and operate bees as well as men."—Leslie Wedgeworth, Pinal County, Arizona.

"There will be no sage or buckwheat honey in southern California this year. The orange honey situation is also off. In the Riverside district with bloom about half over, we have about half a super of honey. All inspectors report no chance for honey outside irrigated sections."—Geo. L. Emerson, Los Angeles County, California.

"The beekeeping library of Friedeman Greiner, a former well-known New York beekeeper, has been donated to the Beekeeping Library of Cornell University by Mrs. Greiner. Mr. Greiner was born in Germany and always maintained contact with the beekeeping literature of his native country."—E. F. Phillips, Tompkins County, New York.

"As president of the American Honey Producers' League, I have appointed all state association secretaries and presidents to make up the committee whose main function will be to arrange for key men in their own state to act as honey receivers for honey donated to the American Honey Institute. I know that the Institute is making a bigger and better industry. If its educational program can continue, our industry will get somewhere."—James Gwin, Dane County, Wisconsin.

"The dates decided upon for National Honey Week this year are November 13 to 18. Mark them on your calendar and start your plans right away. Make it a rule to contact at least one trade channel each week to get them lined up for a real honey program during that week. The National Honey program is ready. Get your copy from the American Honey Institute. A little later, copies of the broadcasts given during the 1932 National Honey Week will be ready, and it would be well for all beekeepers to read these before attempting to line up local radio programs. You can get your schools to show the government film, 'The Realm of the Honeybee,' during National Honey Week. Then get your Parent-Teachers' Association to see that 'The Drama of the Beehive,' is given. Many more programs are outlined in the National Honey Week sheet. If you want to do something this week get your material early from the Institute."—Mrs. Malitta Fischer Jensen, Dane County, Wisconsin.

Sell and Buy Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Copy should be in the 15th of month preceding.

HONEY FOR SALE

We do not guarantee the reliability of honey sellers, although we require strict references from them.

CLOVER honey, in new 60-lb. cans. Wells B. Crane, McComb, Ohio.

CHOICE Michigan clover honey, new 60's. David Running, Filion, Mich.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

AMBER honey in barrels. Sample, 6c. Peter W. Sowinski, Fort Pierce, Florida.

EXTRACTED clover, 4½c; heartsease, 3½c. John Sueper, Grand Island, Nebr.

BEST quality buckwheat in new cans or pails. Earl Rulison, Route 1, Amsterdam, N. Y.

CLOVER, basswood, buckwheat and mixed extracted and comb. F. W. Lesser, Fayetteville, N. Y.

TUPELO honey; will not granulate. Shipped in any quantity. Anthony Bros.' Honey Co., Apalachicola, Fla.

FOR SALE—White clover honey in 60-lb. cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

CLOVER HONEY—White, light amber, amber. Any package. Depression prices. C. J. Baldridge, Kendaia, N. Y.

MICHIGAN CLOVER honey, new cans and cases. Write us your needs. E. D. Townsend & Sons, Northstar, Michigan.

OHIO'S finest comb and extracted white clover honey. Prices on request. Sample, 15c. Geo. Morrison, Cloverdale, Ohio.

CLOVER honey, choice, ripened on bees. Satisfaction guaranteed. Case or quantity. E. J. Stahlman, Grover Hill, Ohio.

RASPBERRY HONEY, blended with a small amount of goldenrod honey. In 60-lb. cans, for 7c a lb. Sample by mail for 20c. Elmer Hutchinson & Son, Lake City, Mich.

HONEY—We sell the best. Combs in carriers of eight cases each; extracted, basswood, buckwheat, sweet clover, white clover and light amber. A. I. Root Co. of Chicago, 224 West Huron St., Chicago, Ill.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

FOR SALE—Well ripened white sweet clover honey. Don't let your customers be without honey. The stock we furnish will please them. Write today for prices. Colorado Honey Producers' Association, Denver, Colo.

STOLLER'S excellent quality clover honey, comb, cut comb and extracted. White stock, unexcelled. Write Stoller Apiaries, Latty, Ohio.

CLOVER honey in new 60's. Harry T. Gable, Romulus, N. Y.

AMBER extracted, 60's, case or ton. E. S. Miller, Valparaiso, Indiana.

AMBER extracted honey, 5c; buckwheat, 4c. C. B. Howard, Geneva, N. Y.

EXTRACTED and comb, clover honey; color, extra white; satisfaction guaranteed. Tom Baldwin, Cecil, Ohio.

MICHIGAN white clover-basswood honey of finest quality in new 60-lb. cans. Orval W. Dilley, Grand Ledge, Mich.

MILD red raspberry, clover, basswood, white comb unexcelled; 24 sections extra fancy, $2.25 per case. White clover extracted honey, 120 lbs. per case or more. L. S. Griggs, 711 Avon St., Flint, Mich.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only or on C. O. D. terms except when the buyer has thoroughly established his credit with the sellers.

WANTED—A car or less quantity of white honey, in 60-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, Birmingham, Mich.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c pound for wax rendered. The Fred W. Muth Co., 229 Walnut St., Cincinnati, Ohio.

WANTED—Honey and beeswax. Beekeepers will find it to their advantage to communicate with us. Please send samples, state quantity available and prices. California Honey Company, Hamilton & Company, Agents, 108 W. Sixth Street, Los Angeles, California.

FOR SALE

FOR SALE—4-frame Lewis-Markle extractor. I. E. Clark, Sun River, Montana.

SAVE queens. Safin cages now 15c; ten for $1. Allen Latham, Norwichtown, Conn.

BEST quality bee supplies, attractive prices, prompt shipment. Illustrated catalog upon request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Assoc., Denver, Colo.

FOR SALE—Comb foundation. Note these new low prices on 100-lb. lots; medium brood, 35c; thin section, 43c. Also wired foundation. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

FOR SALE — Fine quality queen-mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

FOR SALE—Straw skeps, $4.50 each, delivered. G. Korn, Berrien Springs, Mich.

FOR SALE—Improved Barnes saw, in good condition, $10.00. Asher M. Coe, North Olmsted, O.

A NUMBER of slightly soiled copies of 120-page, cloth-bound book, "Beekeeping in the South," at special bargain price of 29 cents postpaid, while they last. American Bee Journal, Hamilton, Illinois.

ELECTRICAL honeycomb uncapping knife, 10-inch thermostatic heat control, 180° F. lowest, 205° F. highest heat, cost 2c a day to operate. Price, $11.50. When ordering, state your voltage, 110-volt or 120-volt. Paul Krebs, 8000 Fulton Ave., Detroit, Mich.

BEE SUPPLY SPECIALTIES

METAL EYELETS in your frames will stop the WIRE SAG which is responsible for most SAGGED COMBS. METAL EYELETS, per 1000, 60c. Handy tool for inserting eyelets, 25c. Superior Honey Co., Ogden, Utah.

BEES AND QUEENS FOR SALE

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or, it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

QUEENS—Very best Italians, 50c. Package bees at competitive prices. Trade for white honey. Homer W. Richard, 1411 Champnolle, El Dorado, Ark.

FOR SALE—100 colonies of Italian bees with complete first class equipment. Guaranteed free from disease. Harry Spooner, Box 121, Stephens, Arkansas.

GOLDEN Italian queens, balance of season, 35c each. Safe arrival and satisfaction guaranteed. Write for prices on June packages. E. F. Day, Honoraville, Ala.

ITALIAN QUEENS, 25c; 2-lb. pkg. with queen, $1.50; 3-lb. pkg. with queen, $2.00. Bees by the pound. All guaranteed free of disease. Write D. Eells, Star Route, Morgan City, La.

MOUNTAIN GRAY Caucasian queens. After June 1, untested, $1.50; 6, $2.75; 12, $4.80; 25, $9.50; 50, $18.00; 100, $35.00. Safe arrival and satisfaction. Lewis & Tillery Bee Co., Rt. 6, Greenville, Ala.

QUEENS, QUEENS—Hollopeter's high producing, gentle, beautiful Italians. Untested, 60c; 2, $1.00; 12, $4.80. Tested, $1.00. Safe arrival, no disease and satisfaction guaranteed. J. B. Hollopeter, Rockton, Pa.

GOLDEN Italian queens that produce good workers, and gentle to handle. Satisfaction guaranteed. Select tested, $1.50; tested, $1.00. Untested well worth 75c, now for 50c. D. T. Gaster, Randleman, R. F. D. 2, N. C.

QUEENS, QUEENS—Beautiful queens, purely mated Italians, at 40c each. They are sure to please you. Quality, service, complete satisfaction assured. We can still supply 2 and 3 lb. packages of bees. Honey Bee Apiaries, Sandwich, Ill.

CHOICE bright Italian queens that are a pleasure to work with and be proud to own. Requeen with stock that has been bred and selected in the North the past 30 years for good winterers, hustlers, gentleness and fine color. One queen, $1.00; 2 or more, 90c each; $9.00 dozen. Breeders, $6.00 each. Emil W. Gutekunst, Colden, N. Y.

EXTRA yellow Italian queens, health certificate and satisfaction insured. Over 15 years a breeder. Prices, 1 to 11, each, 70c; 12 to 23, 60c; 24 to 36, 50c; over 36, 40c. Tested, $1.15 each. Hazel V. Bonkemeyer, Randleman, Rt. 2, N. C.

WESTERN headquarters for package bees and Italian queens. 100 two-pound packages with select young laying queens, $1.20 each; three-pound, $1.60 each. Most northern breeder in the West. Less express charges. Free circular. J. E. Wing, Cottonwood, Calif.

MAYEUX BEE FARM—Italian bees and queens for June shipment. 3 lbs. bees with queen, $2.00 per pkg.; 4 lbs. bees, with queen, $2.50 per pkg. 2-frame nucleus, 2 extra lbs. bees and queen, $2.10 each. Health certificate with each shipment; safe arrival guaranteed. Mayeux Bee Farm, Alex. L. Mayeux, Prop., Hamburg, La.

GOOD queens and package bees. Young, pure three-banded Italians, bred for honey-gathering ability. 2-lb. packages with queens, $2.00 each; 6, $1.90 each; 15 or more, $1.75 each; 3 lbs., $2.50 each; 6, $2.40 each; 15 or more, $2.25 each. Packages without queens, 60c each less. Select young laying queens, 65c each; 10, 60c each; 25 or more, 50c each. Accredited by the Alabama Department of Agriculture. H. C. Short, Fitzpatrick, Alabama.

THE NORMA ROY APIARY—Italian bees with untested queen on comb brood and honey by express or parcel post. 2 lbs. bees, with queen on a comb of brood and honey, $1.50; 3 lbs. bees, with queen and 2 combs of brood and honey, $2.00; 4 pounds bees, with queen and 2 combs of brood and honey, $2.50; 2 frames nuclei, with queen and one extra pound bees, $1.50. Queenless package, deduct 50c from above prices. Safe arrival guaranteed. State certificate of inspection with shipment. All loss immediately replaced. Norma E. Roy, Hessmer, Louisiana.

SITUATION WANTED

DEPENDABLE SINGLE MAN, 20, wants employment in apiary; four years' experience; good habits; willing to work and co-operate. Herbert Boettcher, Cadott, Wis.

MISCELLANEOUS

GENERAL job printing done by A. Matson, 21513 Donaldson, Dearborn, Mich.

BARTER honey for typewriter. Send honey sample and price. Queens Typewriter Corp., 25-20 41st Avenue, Long Island City.

WANTED—To trade 160 acres valley land in Oregon for bees, preferably central states. Box 30, Gleanings in Bee Culture, Medina, O.

ANNUAL report Aerican Honey Producers' League, including 14 papers and complete discussion of 1932 convention for $1.00 membership included. Address V. G. Milum, Vivarium Building, Champaign, Illinois.

BEEKEEPERS—Improve sources of nectar by planting vitex trees, or seed. Two-year-old trees, 40c; one-year-old trees, 25c. New tested seed at $1.00 per ounce. All prepaid. Joe Stallsmith, Galena, Kansas.

Mott's Northern-bred Italian Queens

PRACTICALLY NON-SWARMING

75c each. Guaranteed purely mated, or free queen, means tested in the end. Fair to good breeders, $5.00, $3.00, $2.00. Virgins, 3 for $1.00. Ask for list with testimonials. Satisfaction guaranteed.

H. H. MOTT & SON, Glenwood, Mich., U. S. A.

TALKS TO BEGINNERS
(Continued from page 365.)

is, in a position so that there is only one super between it and the brood-chamber, leaving it in that position in order to have it well filled. As soon as nearly all of the sections are sealed, the comb-honey super should be taken off. Extracting supers are sometimes tiered up in the same manner, but if empty combs are used in the extracting supers, they will be filled as readily during a good honey flow if each empty super is placed on top, as described by Mr. Deyell on page 350.

In managing supers, the problem is to avoid on one hand expanding the super room too rapidly which results in lightweight sections if comb honey is being produced, and partly-filled comb if extracted honey is being produced, and on the other hand, crowding the bees with two few supers.

EDWARDS SLASHES METAL ROOF COSTS

Because thousands of farm buildings cannot go another season without re-roofing, Edwards has slashed steel roofing prices back to the level of 19 years ago. Fire, lightning, wind and weather-proof.

SEND US YOUR ROOF MEASUREMENTS

Get our freight-paid price and $10,000 guarantee. Ask for Catalog 80.

THE EDWARDS MANUFACTURING CO.
633-683 Butler St. Cincinnati, O.

Malick Prefers
Master Bred
Dark Italians

"I received a lot of your dark leather-colored Italian queens last spring. I will say I like them better than any I ever got anywhere else."
W. A. Malick, Pa.

For fifteen years "Master Bred" queens and bees have been bred for **GENTLENESS** and **HONEY PRODUCING** qualities. Our dark three-banded Italian stock comes direct from Italy.

2-lb. package with queen.....$1.50
3-lb. package with queen..... 1.90
Queens.....30c each after May 20
Before the 20th, 50c each.

THE V. R. THAGARD CO.
GREENVILLE ALABAMA

3-Band Italian Bees and Queens

One to ten 3-lb. package bees with queens, $2 each; over ten, $1.75 each. Young mated queens, 25c each, any number. Queens or bees delivered.

D. C. Jackson, Funston, Georgia

Queens - Queens

Hollopeter's hustling, gentle, prolific Italians. Untested, 60c; 2 for $1.00; 12 for $4.50. Safe arrival, satisfaction and no disease guaranteed.

J. B. HOLLOPETER, Queenbreeder.
WHITE PINE BEE FARMS
(With Gleanings from 1911) ROCKTON, PA.

QUEENS 35c each **"Diamond"** **QUEENS 35c each**

200% INCREASE IN OUR QUEEN SALES OVER LAST SEASON! THERE'S A MIGHTY GOOD REASON FOR THIS INCREASE—EXCELLENCE!!

Our queens are reared on honey through both natural honey flow and feeding.

BRIGHT ITALIAN PACKAGE BEES AND QUEENS

	1-10	11-50	51-100
2-lb. with selected laying queen	$1.50	$1.40	$1.35
3-lb. with selected laying queen	1.80	1.70	1.65
Queens "Diamond" selected and laying	Any number, 35c each		

Special price on large quantities. Health certificate and hiving directions furnished. Service and quality guaranteed.

GARON BEE COMPANY, DONALDSONVILLE, LA.

No Cash Needed

For Root Quality Bee Supplies

Pay for Them with Beeswax

STANDARD HIVES
Metal Covers, 10 Frames
5 Complete, $12.70

STANDARD FRAMES
Triple Locked
100 for $4.50

SECTIONS
1000 (Beeway), $10.50.
$10.50

STANDARD SMOKER
Tin
85c

QUEEN EXCLUDERS
10-frame size
60c

BEE VEIL
Wire
70c

EXTRACTORS, TANKS, ETC.

BUY NOW

The A. I. Root Company, Medina, Ohio

Root QUALITY BEE SUPPLIES

Root QUALITY BEE SUPPLIES

Honey Sells Best When Best Packed

HONEY CONTAINERS

FREE

With every order for 500 Window cartons; with orders for 250 and 15c; 100 and 20c. Not distributed otherwise.

This Comb Honey Easel for stores is so constructed that a section of comb honey is displayed on the front of the easel. The easel is printed in green, yellow and black. The white shows through and gives the effect of a fourth color.

Easel is 13" high and 9" wide. The price is marked in by beekeeper.

ROUND JARS
PANELED JARS
HONEY SKEP JARS
COMB HONEY CARTONS
CELLOPHANE
CANS, PAILS
60-POUND CANS, ETC.

Write for prices on quantity lots. Combine your order with your neighbor and enjoy our extra low prices.

Write at once to

The A. I. Root Co.

Medina, Ohio

DR. C. C. MILLER AND FAMILY

(Continued from page 348.)

"Who's there?" I answered back. "Ernest Root of Medina." Then came that beautiful voice (he was a singer as well as a speaker and a writer), "Well, my dear boy, how did you get here this time of night? Come right in."

How I did sleep that night. The family did not waken me, and when I arose with the sun well up, I had that cordial greeting that only the family of Dr. Miller and himself could give. I explained to the women folks how I got there, about the boy giving me the directions to stop at

(Continued on page 376.)

Queens by Return Mail

4 for $1.00

Pure Italian bees and queens. I ship in light weight cages on sugar syrup. All packages 15% overweight. Young baby bees and queens. I guarantee all queens to be purely mated. And you will get them when you want them. Safe arrival and satisfaction. If not, return them and I will replace or refund money. 2-lb. pkg. with queen, 1 to 10, $1.30; 11 or more, $1.25; 3-lb. pkg. with young queen, 1 to 10, $1.75; 11 or more, $1.50. Tested queen, 50c each. All packages F. O. B. shipping point. State health certificate. Safe arrival in U. S. and Canada. No stamps accepted.

John A. Norman, Ramer, Alabama

Mountain Gray Bees and Queens

Better Caucasian stock at lower prices. Never before have we been able to offer you such high quality stock as now. We solicit a comparison of our stock with any for color, gentleness and general satisfaction. Accredited and certified by Alabama Dept. of Agriculture.

Queens, untested, any number, 50c each; tested, each, $1.50. Select tested, each, $2.50. 2-lb. packages with untested queens, 1 to 5, $2.75 each; 6 and more at $2.50 each. 3-lb. size at $3.35 each. 3-frame with untested queens, $3.00 each. Safe arrival and satisfaction guaranteed.

Bolling Bee Co., Bolling, Alabama

"Bee Supplies"

PRICES are lower than they have been in many years. NOW is the time to send us your orders. If you need supplies in a rush, try us for real service.

If you have not received a copy of our 1933 price list, it will pay you to write for one before placing your orders.

A. H. Rusch & Son Co.
REEDSVILLE, WISCONSIN

DON'T CHOP THE GRASS. Shave the ground with **"Marugg Special"** imported dangel cutting edge scythe. Catalogue free. Address **The Marugg Co.**, Dept. B, Tracy City, Tenn.

$2.75

FOR 5-LB. PKG. OF BEES WITH QUEEN AND TWO COMBS BROOD

Will store honey immediately on arrival.
3-lb. pkg. with queen on comb brood.... $1.75
4-lb. pkg. with queen on comb brood.... 2.15
These two packages combless at same prices.

Every package will be filled with pure Italian bees, with enough overweight to insure full packages on arrival.

QUEENS, 35c EACH

Large quantities, priced on demand.
Pure Italians. Select quality only.

Safe arrival, satisfaction and prompt service guaranteed.

Cloverland Apiaries, Hamburg, La.

The Toombs County Apiaries, Lyons, Georgia

Annoucing new low prices on dependable packages of bees and queens. New name but well-known and old in experience. We have handled and shipped thousands of packages of bees and queens all over the U. S. and Canada and know how to get them to you in the best of condition. Our southeastern location offers some advantage in transportation. Our bees are a combination of the best strains of Italians and only the best selected stock are retained for breeding purposes. The best methods known are used by us in producing queens with ideal conditions, a light flow which insures those large uniform-size queens.

2-lb. pkgs. Italian bees with queens, $1.75 each; 10, $1.50 each.
3-lb. pkgs. Italian bees with queens, 2.25 each; 10, 2.00 each.
Untested queens, 50c each, or 100 for $40.00.
Tested queens, $1.00 each.

Safe arrival and complete satisfaction guaranteed on every package and queen shipped. Health certificates with every shipment. A bargain in every package, over-weights are always given. No order too small to be appreciated and we are prepared to render the best of service. Order direct from this advertisement for prompt shipments.

LARGE YELLOW NORTHERN-BRED ITALIAN QUEENS, bred in our northern Ohio climate from queens with 300-lb. colony average. These queens produce unusually large yellow bees, very gentle and beautiful to see. Selected with 20 years' experience. Being acclimated, these northerners produce more honey and winter better than southerners. Have never used packing, and all my breeders must survive two northern winters perfectly. Northern bred queens in northern apiaries mean more honey and less winter loss. Pure mating, no disease, and replacement of losses guaranteed. Select untested, 1-10, 85c; over ten, 75c. Select tested, $2.50 each. Dodge Alexander, Station G, Toledo, Ohio.

Thrifty Queens
30c Each

Accredited and Certified

THRIFTY bees pile up extra supers of honey. That's why they are guaranteed to please. We can make quick delivery on large or small orders. Only the finest **THRIFTY** three-banded queens will be shipped. Write or wire your order today.

W. J. Forehand & Sons
Since 1892. FORT DEPOSIT, ALA.

Queens By Return Mail 25c

BRIGHT THREE-BANDED ITALIANS

Order **NORMAN BROS.'** queens and bees. They will prove to your satisfaction. When you realize how our 3-band Italian queens will help to increase your honey profits, you will want no other kind. We have spared neither labor nor expense to make them the best. Every queen guaranteed purely mated, safe arrival, and satisfaction. If not, return them, and we will replace or refund money.

2-lb. pkg. with select queen..... .....$1.25
3-lb. pkg. with select queen..... ... 1.75

All packages F. O. B. shipping point. We guarantee state health certificate, full weight of bees, light weight cages and safe arrival.

Norman Bros.' Apiaries, Ramer, Alabama

DR. C. C. MILLER AND FAMILY
(Continued from page 375.)

the house where there were "weeds and things." Miss Wilson and Mrs. Miller rather resented this. "There isn't a weed around the place," they said. Dr. Miller caught the spirit of my joke, adding, "Why, yes, this place is covered with weeds." The weeds he meant, however, were sweet clover plants which he had planted along the roadside and over his place.

Breakfast (and what a breakfast it was) was followed by family worship. Then Miss Wilson began, "Mr. Root, it is too much to use up your bodily strength by riding these 400 miles to Marengo. Why didn't you come by train?" Mrs. Miller joined in and then Dr. Miller explained

(Continued on page 377.)

Golden Italian Queens

Select untested, noted for their gentleness and honey-gathering. 1, 50c; 6, $2.75; $4.50 per dozen. Satisfaction guaranteed in U. S. and Canada. Health certificate with each package.

E. A. SIMMONS APIARIES, Greenville, Ala.

Get Running's Queens

And Get Honey—They Satisfy

The kind WE use in our extensive Michigan Apiaries, where WE produce honey by the carload.

Accredited and certified ITALIAN stock, bred for gentleness and honey-getting.

PRICE—One, 40c; three for $1.00; One hundred, $33.00.

QUICK SERVICE

DAVID RUNNING
SUMTERVILLE, ALABAMA

Your Last Chance

To buy bees and queens at the bottom prices. They will advance before season of 1934. Fill your empty equipment now and be ready to get a good honey crop next season; also requeen, it will pay you.

3-lb. packages with queens, $1.50. Just right for late increase.
First quality queens, Select Untested, 25c, any number.

Merrill Bee Company - - Buckatunna, Miss.
(MISSISSIPPI'S OLDEST SHIPPERS)

DR. C. C. MILLER AND FAMILY

(Continued from page 376.)

how, from a medical standpoint, it was very necessary for me to conserve my physical body. I took the advice and was careful ever after that. The modern automobile has solved that problem.

A Mistake in Photography

Another time I arrived unexpectedly at Dr. Miller's home when both Dr. Miller and Miss Wilson were out among the bees. They didn't see me at first. I didn't intend they should. The honey flow was over and the bees were robbing. Miss Wilson, oblivious of the camera and of my presence, was poking rags into the cracks of the old hives. Dr. Miller had argued to me that it wouldn't pay him to buy new hives, and when he did buy new ones, he didn't paint them. This was where he and I disagreed. I had my camera with me and began clicking at Miss Wilson while she was poking rags into the cracks of the hives. I had taken some twenty pictures before either of them knew what I was up to. I was thinking that this would be great stuff for Gleanings. Suddenly Miss Wilson looked up and saw me taking snapshots.

"Of all times to come and take a picture of the home apiary, with rags stuffed in the cracks to stop robbers! And the worst of it is, you caught me stuffing the rags in," she said, rather fussed up. I remember how she implored me not to use

(Continued on page 381.)

Queens, 25c Each

For one or one hundred. Palmetto Queens are superior in quality and sell at regular queen prices. A trial order will convince you. Orders booked in advance at no extra charge. Canadian orders, 15% extra for exchange.

C. G. ELLISON, BELTON, S. C.

SMITH'S

Accredited and Guaranteed Queens 30c

When buying queens, DEMAND the BEST. We will not ship you a queen we would not use ourselves and they have to be the BEST. Bright three-banded Italians, the hustling beauties. Remember for the remainder of the season, 30c each, any number. Can serve you promptly and satisfactorily.

N. B. SMITH & CO.

CALHOUN ALABAMA

June Queens Are Good Queens

Not too late to get good results from package bees where you have a late honey flow.

2-lb. pkgs., $1.50 each; lots of 10, $1.40 each. 3-lb. pkgs., $2.00 each; lots of 10, $1.90 each.

Every package will be supplied with young bees and a select queen that is guaranteed against supersedure for one season.

QUEENS

35c ea., three for $1.00; 100 for $30.

Pure mating, no disease, safe arrival and satisfaction guaranteed.

THE CROWVILLE APIARIES

Rt. 1. WINNSBORO, LA.

Queens, 25c Each

Old Reliable 3-Banded Italians

Send me your orders. I rear queens to please and gain your patronage. Try them at the price. If you are not satisfied, return them and I will replace them or refund your money. You are the judge. All queens guaranteed purely mated and to reach you in good shape.

2-lb. pkgs. baby bees with young queens..$1.25
3-lb. pkgs. baby bees with young queens.. 1.50
F. O. B.

N. Norman - Lapine, Alabama

MILLER'S

Old Reliable 3-banded Italians

They Satisfy

20 Years a Breeder

There is a big difference in QUEENS.

BALANCE OF SEASON.....30c EACH

JOHN G. MILLER

723 C STREET, CORPUS CHRISTI, TEXAS

Do You Like

Gentle Bees
Beautiful Yellow Bees
Large Bees
Bees that Swarm Less
Very Prolific Queens
Bees that Rob Little
Vigorous Hardy Bees and
Bees that Get the Big Yields?

If You Do

You and I should get together.
Write for our free book,
"About Bees."
I will accept as payment
for queens a good
quality white extracted Honey.
Write for particulars.

QUEEN PRICES

Untested, $1.00 each.
Tested, $2.00 each.
Breeders, service
guaranteed for
the season,
shipped with half pound
of bees, $7.50.

Jay Smith

Route 3, Vincennes, Indiana.

FOR SALE

PURE ITALIAN BEES

Red clover kind, 40c each, or $4.50 per dozen.
1 lb. of bees with young queen.....$1.50
2 lbs. of bees with young queen..... 2.00
All charges paid to your postoffice in U. S. A.
GRAYDON BROS., GREENVILLE, ALA., Rt. 2.

Moore's Strain

Leather Colored Italian Queens
Superior Stock

50c Each

World-wide reputation for honey-gathering, hardiness, gentleness, etc., since 1879. Safe arrival and satisfaction guaranteed. Circular free.

J. P. Moore

MORGAN KENTUCKY

ONCE IN ONE HUNDRED YEARS

Bargain Prices on the Season's Best Queens

Reared during summer honey flow, and they are fine. Select untested, guaranteed mated and laying satisfactorily before shipment. Also against supersedure the first season.

Summer Prices—1 to 10, 30c each; 10 to 100, 25c each.

Package Bees—2-lb., 1 to 10, $1.25; 10 to 100, $1.15. 3-lb., 1 to 10, $1.65; 10 to 100, $1.50.

Special Booster Packages—Overweight, baby bees, no queens, deduct 25c per package from above prices.

JENSEN'S APIARIES

CRAWFORD MISSISSIPPI

Quality and Service

We know this is what you want. Our customers are continually calling our attention to small details in quality and service, which they have never received before. As to service, not a single customer has failed to get his order on the date booked. As to quality, not a single complaint. This season try our 24-hour service, and be convinced. Overweight packages with young three-banded Italian bees and queens:

2-lb. pkg. with queen.....$1.25
3-lb. pkg. with queen..... 1.75
Queens, guaranteed to please the most exacting, 30c each.

SHAW & HOMAN, SHANNON, MISS.

Carniolan Queens

Our queens are hardy, gentle, prolific, great honey-gatherers, builders of very white combs. Use mostly wax in place of propolis. No foulbrood here. No package bees.

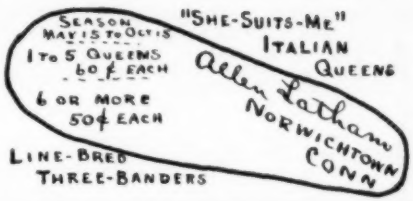
Untested queens.....One, 60c; dozen, $7.00

A. M. MIDDLETON, FORT EDWARD, N. Y.

Leininger's Strain of Italians

We have been breeding queens for 50 years, and have developed a wonderful strain of Italian bees, that are equal to the very best that money can buy, at the following prices:

Untested, each, 75c; 6 queens, $4.25
Tested queens, $1.00 ea. Breeders, $10.
Address FRED LEININGER & SON, DELPHOS, OHIO.



Imperial Italian Queens---Bees

(A leather-colored strain.)

Untested queens (any time), 50c each. My queens and bees have been used and favorably recommended by Mr. M. J. Deyell, Medina, O., and other nationally known beekeeping authorities. Ask for my latest catalog and prices.

H. E. COFFEY, Whitsett, Texas.

Better-Bred Italian Queens, 25c, Any Quantity

Special introductory offer.....10 queens for $2.35
3-lb. package with queen, any quantity.....$1.65; 2-lb. pkg., $1.20
Orders filled promptly or money refunded.

CALVERT APIARIES, A. L. WEBB, CALVERT, ALABAMA

QUEENS

WE MEAN MONEY CAN BUY NONE BETTER

Bred from the best selected stock of hundreds of honey producing colonies of the northwest. They build the winters when it gets forty below zero, when the honey flow comes, they gather a good crop of honey in a short time. They are bred by the most skillful breeders. Try them and be convinced. Pure mating, safe arrival and absolutely satisfaction in U. S. A. and Canada. Prompt service.

SELECT UNTESTED, 1 to 100, 30c EACH

BROWER BEE COMPANY, BANGOR, ALABAMA

Reference, R. G. Dun & Co. Any bank of Birmingham,, Alabama.

Morrison's Northern Queens

STRICTLY THREE-BANDED STOCK

If you want Italian queens with years of selecting and breeding back of them (22 years of experience) for gentleness, honey gathering, less swarming and capping their honey white, requeen with Morrison's line-bred stock.

UNTESTED .....$0.50 each
TESTED ..... 1.00 each
BREEDERS ..... 5.00 each

Pure mating, safe arrival and perfect satisfaction guaranteed.

George Morrison, Cloverdale, Ohio

Package Bees and Queens

Superior Italian Stock

•

	2-lb.	3-lb.
1 pkg. with queen	$1.50	$2.00
5 or more pkgs. " "	1.40	1.90
10 or more pkgs. " "	1.30	1.80
25 or more pkgs. " "	1.25	1.75

Select young laying queen.....50c
5 or more queens, each..... 45c
10 or more queens, each.....40c

•

We ship fresh from our yards and are prepared to give prompt and efficient service.

•

Citronelle Bee Co., Inc.
Citronelle, Alabama

TOLD BY THE JAY

(Continued from page 349.)

mand, 'Eyes flont.' By this time the boys knew there was something out of order with the captain's articulator and, in spite of themselves, they could not help smiling. It would never do for my tent mate and me to smile for we knew that he knew what we knew. So we kept our faces immovable as marble, although we nearly died from suppresed laughter.

"After the drill the story spread like wildfire, and after taps that night some one began to say 'buzz.' We were ordered out and had to stand at attention for a full hour. Then we again turned in when several, though not so many as before, said 'buzz.' Again we were ordered out and marched at double quick for ten miles or more when we again were allowed to turn in. Some one again started to say 'buzz,' but about a dozen of the boys were upon him and the word went round that any one who ever again said 'buzz' would be thrown over the cliff into the Tennessee.

"After all, the captain was a pretty good sport for we heard no more about being courtmartialed."

WALTER T. KELLEY

NO CASH NEEDED

I will accept your wax in trade for package bees, queens and bee supplies. Send me a list of your needs and I will quote you my very best offer.

QUEENS, 25c EACH

Young, 1933, laying, 3-banded Italians, guaranteed to please you.

Gulf Coast Bee Co., Houma, La.

Genuine 3-Banded Italian Queens & Package Bees

AT A PRICE THAT SAVES BEEKEEPERS MONEY
OUR SUPPLY IS LARGE—OUR QUALITY THE BEST
PACKAGE PRICES F. O. B. CITRONELLE.

2-LB. PACKAGE WITH QUEEN.....$1.25 EACH, ANY NUMBER
3-LB. PACKAGE WITH QUEEN..... 1.75 EACH, ANY NUMBER
QUEENS PREPAID TO YOU.....40c EACH, ANY NUMBER
IN U. S. FUNDS.

HOLDER APIARIES, CITRONELLE, ALA.

Health certificate furnished—Prepared to give prompt service.

DR. C. C. MILLER AND FAMILY

(Continued from page 377.)

those pictures in Gleanings. Dr. Miller enjoyed the joke. I knew her so well that I kept on clicking the camera. Finally, I discovered that I had forgotten to remove the cap and during all that clicking or snapping of the shutter, I had not taken a single picture. Miss Wilson screamed with delight and said, "Don't you try that on me again." And I didn't.

The Dr. Miller home, inside and out, premises and all, were models of neatness and beauty. The "weeds" consisted only of the sweet clover which Dr. Miller had put out for his bees. During the last several years of his life, Dr. Miller and his family had made a specialty of growing gladioli, some varieties of which they had developed. The family took particular delight in sending some of these beautiful flowers to the hospitals and to the sick people at their homes.

In this same way they had been strewing roses of love and help in the pathway of the whole beekeeping world for 50 years. Speaking of "fifty years," Dr. Miller's book, "Fifty Years Among the Bees," is still a beekeeping classic.

Medina, Ohio.

KNIGHT'S

Dependable Queens

Line Bred, Three-Banded Leather-Colored Italians, Accredited and Certified by Alabama Department of Agriculture.

Do not allow a few cents to stand between you and good queens. You need the best. They are extra large, producing large bees. They clean up European foulbrood. They are the best honey-gatherers. Gentle and prolific, and the best winterers for northern climate. Have hundreds of letters stating they are.

Prices, Post Paid

Select (one grade), 1 to 9, 50c each; 10 to 19, 40c each; 20 and more, 35c each. No charge for clipping. Pure mating guaranteed. All queens sent in large six-hole cages. They stand the trip better.

Prepaid Package Bees

2-lb., including queen, $2.50; 3-lb., including queen, $3.00. Parcel post or express. No disease. Health certificate

JASPER KNIGHT, Hayneville, Ala.

The Work
OF A GREAT
Bee Master

"Fifty Years Among the Bees"
BY DR. C. C. MILLER

Every student of beekeeping will want to add this wonderful book to his library. Dr. Miller was one of the greatest authorities on bees of his day. The book contains over 300 pages. Illustrated. This book will not be reprinted, so while our stock lasts, we make this offer.

Only 50c Postpaid

The A. I. Root Co.
MEDINA, OHIO

Meeting the needs of America's

Beekeepers

All apiculture depends upon the queen. The very best are furnished at the following prices:

1 Untested Queen, 50c; 6, $2.75; 12, $5.25.

2-lb. package of Italian bees with queen, $2.00; 3 lbs. bees with queen, $2.50. Write for prices on large lots.

Forehand's, the standard for over a quarter century. Safe delivery and perfect satisfaction guaranteed in U. S. and Canada.

N. Forehand
DeLAND FLORIDA

AGAIN

OUR WELL KNOWN MATING GUARANTEE

When you buy Caucasian Queens be sure of a number of things.

—That the stock is true.
—That the original breeders were well selected.
—That every queen is mated with Caucasian drones of equal stock.

We Guarantee That Our Matings Are Pure—You Are the Judge!

We will replace every queen whose bees are not gray Caucasians. You are the sole judge. You can buy with confidence.

Our breeding stock is the best obtainable in Russia.

LADY-LIKE CAUCASIANS

Gentle—Hardy—Prolific—Persistant Foragers. Send for Free Caucasian Circular.

Special Reduced Prices on Queens
60c Each, 6 or more, 50c Each.

CAUCASIAN APIARIES, BROOKLYN, ALA.

The Cheapest Queens

are not always those quoted at the lowest price. **RESULTS COUNT.** It takes so little honey to pay the difference in a really good queen and just an ordinary queen that you can not afford to take chances on getting poor queens.

Certified and Accredited by the State Dept. of Agriculture. Safe arrival and satisfaction guaranteed. Write for complete price list. 1 untested, 35c; 3 for $1.00. Tested, 60c each.

J. M. CUTTS & SONS

R. F. D. NO. 1. MONTGOMERY, ALA.

Queens and Package Bees

SATISFACTION GUARANTEED

Select untested Italian queens	**$0.50**
10 or more queens, each	**.35**
2-lb. package with queen	**2.00**
3-lb. package with queen	**2.50**

Fifteen years' experience as queen-breeders, four with Mel Pritchard. Our aim, "Once a customer, always a customer."

Alabama Apiaries

MT. PLEASANT ALABAMA

York's Bees and Queens

QUALITY -- SERVICE

Foundation stock, Jay Smith's strain of large yellow Italians. These bees are not too bright nor too dark to mar their beauty. They are real honey getters and unusually easy to handle. Conditions could not be better for quality production and we are prepared to give you quality and service on any number of packages or queens. Full weights, safe arrival and satisfaction guaranteed.

2-lb. pkgs. bees with queens, $2.00 each; 10, $1.75 each.
3-lb. pkgs. bees with queens, $2.50 each; 10, $2.25 each.
Untested queens, 65c each, or $50.00 per 100.
Tested queens, $1.00 each.

A record average of 250 lbs. to 500 lbs. from lots of 50 2-lb. packages does not seem like occasional skyscrapers to us. We own and operate bees in three states and have always stressed the importance of better bees. We never ship bees or queens that we would not use ourselves in our more northern apiaries where honey production is our only object. Our bees are bred for business and our experience in select breeding and shipping means a saving to you.

We also offer prompt and efficient service on Lewis Beeware and Dadant's Foundation at Catalog Prices.

YORK BEE CO., The Universal Apiaries JESUP, GA.

CLOUDS AND SUNSHINE

(Continued from page 368.)

him out of it, so said nothing more on the subject.

When Anthony arrived home, his dog, old Spot, scarcely knew him but shied away at first. Anthony was hungry. No more starvation rations were necessary for awhile at least. He prepared a good meal and sat down to it with unusual satisfaction. The following day he got ready some extra hives and combs to be used for dividing his colonies a little later on when the early honey flow from fruit bloom and dandelions would be at its height. It had not occurred to Anthony that his colonies might not be strong enough in bees to divide at that time, nor had he looked into any hives to find out the real condition of his bees.

A. N. ONYMOUS.

(To be continued.)

30 CENTS each for good untested three-band queens, Any Number. Now Ready.

D. W. Howell, Shellman, Ga.

Caucasians

have all the good traits of Italians, plus extra gentleness, less swarming, more prolific, longer tongues, less robbing and more dependable workers. Wintered here out-of-doors, and bred in a climate like their native land—severe winters, cold windy springs—thus insuring their good qualities. Breeders from Prov. Terek, Caucasus.

Carniolans

Prolific at all times, very gentle, best of winterers, build up rapidly during the changeable weather of spring, build beautifully white combs, and most excellent workers. One customer reports an average of 435 lbs. per colony, extracted, spring count, for the whole yard of over 50 colonies. Have supplied many State Agricultural Colleges and Experiment Stations in U. S. and Canada with them. My own and Jan Strgar imported strain.

PRICES BOTH RACES:

1 untested queen	50c
6 untested queens	$2.75
12 untested queens	5.00
Tested queens, each	1.00
Breeders (1932 reared)	5.00

Both these races give better results in northern and western sections of our country where the flow comes early. Use some Caucasians or Carniolans among your Italians, both will improve your Italians in gentleness and honey gathering. These times necessitate your using the most dependable bees as well as efficient management.

ALBERT G. HANN

GLEN GARDNER NEW JERSEY

Root Northern Bred Italian Queens

We will have young laying queens produced by Mel Pritchard, beginning June 15. There are no better queens than these. Order some today.

Price 1 to 9, 75c each; 10 or over, 65c each.

Imported Italian Stock

We will also have young laying queens, daughters of a queen imported from Northern Italy. We already have some of these daughters in our apiaries. They are good queens. Better try some.

Price, $1.00 each.

THE A. I. ROOT COMPANY, MEDINA, OHIO

We Offer You

Bright Three-banded Italian Bees —None Better.
Superior Queens — overweight package bees.
100% Service.
Accredited and certified by Alabama State Department of Agriculture.

VIA EXPRESS COLLECT

2-lb. package with select untested queen, $1.75 each.
3-lb. package with select untested queen, $2.25 each.

Prepaid prices by mail quoted on request. Select untested queens, 30c each. Select tested queens, 80c each.

We have the bees, equipment and experienced labor to fill all orders promptly on the day you wish them. Entire satisfaction guaranteed on everything I ship.

Hayneville Apiary Co.
W. E. Harrell, Prop.
HAYNEVILLE, ALABAMA

How to Handle a Big Honey Flow Profitably

Perhaps that will be your problem. Indications point toward a good honey crop.

Your questions all answered in

A B C and X Z Y of Bee Cultrue

815 pages, 813 Illustrations

$1.00

A few slightly damaged copies for only

Mail Orders Now.

THE A. I. ROOT CO.
MEDINA, OHIO

Index to Display Advertisers

Alabama Apiaries 382
Bolling Bee Co. 375
Brower Bee Co. 379
Calvert Apiaries 379
Caucasian Apiaries 382
Citronelle Bee Co., Inc. 380
Cloverland Apiaries 375
Coffey, H. E. 379
Continental Can Co. 327
Crowville Apiaries, The 377
Cutts & Sons, J. M. 382
Dadant & Sons 328
Edwards Mfg. Co. 372
Ellison, C. G. 377
Falconer Mfg. Co., W. T. 326
Forehand, N. 381
Forehand & Sons, W. J. 376
Garon Bee Co. 372
Graydon Bros. 378
Gulf Coast Bee Co. 380
Hann, Albert G. 383
Hayneville Apiary Co. 384
Hazel-Atlas Glass Co. ..... Inside Front Cover
Hilbert, James E. 326
Holder Apiaries 380
Hollopeter, J. B. 372
Howell, D. W. 383
Jackson, D. C. 372
Jensen's Apiaries 378
Knight, Jasper 381
Latham, Allen 379
Leininger & Son, Fred 379
Lots Co., August 323
Louden Machinery Co. 326
Marugg Co., The 375
Merrill Bee Co. 376
Merrill Apiaries, G. H. 324
Middleton, A. M. 379
Miller, John G 377
Moore, J. P. 378
Morrison, George 379
Mott & Son, E. E. 371
Muth Co., The Fred W. 323
Norman Bros.' Apiaries 376
Norman, John A. 375
Norman, N. 377
Red Stick Apiaries 326
Root Co., The A. I., Back cover, 373, 374, 381, 383, 384
Root Co. of Chicago, A. I. 326
Root Co. of Iowa, A. I. 322
Root Co. of Philadelphia, A. I. 323
Root Co. of Syracuse, A. I. 322
Running, David 376
Rusch & Son Co., A. H. 375
Savings Deposit Bank Co. 326
Shaw & Homan 378
Simmons Apiaries, E. A. 376
Smith, Jay 378
Smith & Co., N. B. 377
Stevenson's Apiaries 324
Stover Apiaries ..... Inside Back Cover
Thagard Co., The V. R. 372
Toombs County Apiaries 375
Valley Bee & Honey Co. 324
Williamson, Chas. J. 326
Woodman Co., A. G. 322
York Bee Co. 382